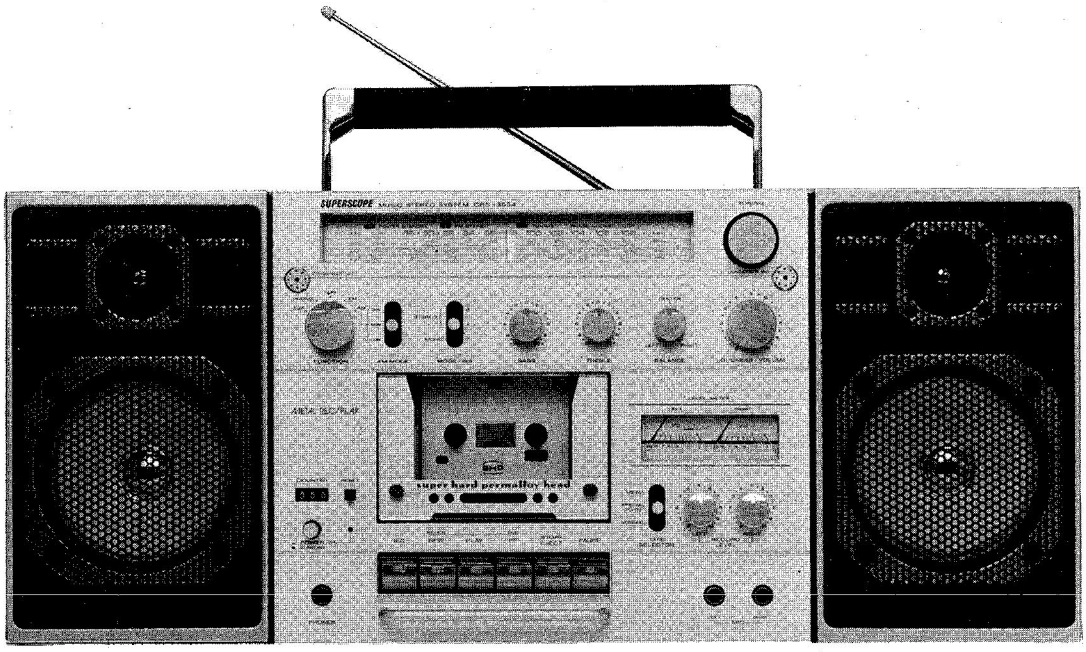
RADIO/STEREO CASSETTE RECORDER

MODEL CRS-3504

SERVICE DATA

JAN./1981



SUPERSCOPE®

SUPERSCOPE DESIGN AND SERVICE

Using superior design and selected high grade components, SUPERSCOPE has created the ultimate in stereo sound. Only original SUPERSCOPE parts can insure that your SUPERSCOPE product will continue to perform to the specifications for which it is famous.

Parts for your SUPERCOPE stereo are generally available within 72 hours throughout the nation via a toll-free line to our National Parts Depot in California. The sales professionals who take your call immediately refer to their own desk top computer terminal and can quickly determine the availability and price information you require. If for some reason, your order should exceed our available stock, we usually can instantly provide an alternate replacement part or current delivery information. When the order is placed and confirmed, the computer simultaneously generates "hard copy" orders at the distribution center. As hard copies come directly from the computer to the national parts depot, your requested stock is assembled and prepared for shipment and placed on the first available carrier for delivery to you.

ORDERING PARTS

Phone orders will eliminate mail delays, and we encourage the use of this method. If you order by mail, use SUPERSCOPE parts order forms which are available from our National Parts Depot located at the following address:

The following information must be supplied to eliminate delays in processing your order:

1. Complete address.
2. Complete part numbers.
3. Complete description of parts.
4. Model number for which part is required (indicate SUPERSCOPE).
5. Account number (for account customers only).

Direct consumers will be provided with the current retail prive quotation on available parts in order to advise them of the cost of the parts and shipping.

OVERSEAS PARTS ORDERING

Parts may also be ordered from the following overseas addresses:

Marantz Australia
32 Cross Street
Brookvale, N.S.W. 2100
Australia

Marantz Germany Gmbh
Max-Planck-Straße 22,
D-6072 Dreieich
West Germany

Marantz Audio U.K., Ltd.
193, London Road
STAINES, Middlesex
United Kingdom

Marantz Svenska A.B.
Franzengatan 6
10425 Stockholm
Sweden

Marantz Europe, S.A.
326, Avenue Louise
Boite 32
1050 Brussels
Belgium

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All of the above locations are fully equipped to take care of your total service needs. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please contact the nearest facility for the necessary assistance.

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TABLE OF CONTENTS

1. SERVICE NOTE 1
2. TEST EQUIPMENT REQUIRED FOR SERVICING REPLACEMENT 1
3. CIRCUIT DESCRIPTION 1
4. UNIT DISASSEMBLY 2
5. SERVICE GUIDE 3
6. MECHANICAL ADJUSTMENT 5
7. ELECTRICAL ADJUSTMENT AND MEASUREMENTS 8
8. ADJUSTMENT POINTS 10
9. TUNER ADJUSTMENT 11
10. BLOCK DIAGRAM 13
11. CIRCUIT BOARD DIAGRAM 16
12. EXPLODED VIEWS AND PARTS LIST 20
13. TECHNICAL SPECIFICATIONS 39
14. SCHEMATIC DIAGRAM 40

1. SERVICE NOTE

1.1 MOUNTED P.W. BOARD

As can be seen from the circuit diagram, the chassis of Model CRS-3504 consists of following units. Each unit mounted on a printed circuit board is described with in the square enclosed by bold dotted line on the circuit diagram.

Tuner, Rec/Play Amp, Tone Amp. P201
Tape Selecter Amp. P202
Input/Output Jack P203
Power Amp. & Power Supply P901
Power Switch P941
Speaker P951
Speaker P961
Mic. Jack P500
Bias Osc. & Motor Filter P600
Tape EQ P301, P302
Line Amp. P303
Head Phone P931

2. TEST EQUIPMENT REQUIRED FOR SERVICING REPLACEMENT

2.1 AUDIO SECTION

For measuring check the Model CRS-3504, the following instruments and materials are necessary.

- Audio Oscillator (at OSC)
- Attenuator (600 ohm)
- VTVM
- Distortion Meter
- Oscilloscope
- Bandpass Filter
- Wow and Flutter Meter
- Torque Meter (Cassette Type)
- Digital Frequency Counter
- Blank Tape (Completely erased with bulk eraser)
  - * AC-212 (Normal)
  - * AC-512 (CrO_2)
  - * AC-711 (Metal)
- Test Tape (New tape)
  - MTT-111 . . . . Wow and Flutter. Tape Speed.
  - MTT-112 or 212 . . . Measurement of output level. Signal to Noise Ratio.
  - MTT-150 . . . . Adjustment of output level.
  - MTT-216 or 116U . . . Measurement of Frequency Response. (For Normal)
  - MTT-316 or 116K . . . Measurement of Frequency Response. (For CrO_2, Fe-Cr)
  - MTT-121 . . . . Cross Talk.
  - MTT-141 . . . . Channel Separation.

NOTE: If any doubt is noted in a measured value, used new tape.

2-2. RADIO SECTION

FM: FM RF Signal Generator (Output Impedance 50 ohm)
Matching Box (Input 50 ohm, Output 75 ohm)
2.5 ohm Load Resistor
Audio VTVM & Distortion Meter

AM: AM RF Signal Generator (Output Impedance 50 ohm)
Test Loop Antenna . . . . . MW, LW
2.5 ohm Load Resistor
Audio VTVM & Distortion Meter
Dummy Antenna (series 30Ω with 10 pF) . . SW

3. CIRCUIT DESCRIPTION

3.1 POWER SUPPLY CIRCUIT

6.3V line . . . Equalizers, tuner, and bias oscillator
9V line . . . Power amplifier, motor, lamp. etc.
A zener diode stabilizes the 6.3V lines.

3.2 MUTING CIRCUIT

The muting circuit is switched ON automatically by muting circuit switches incorporated in the function, recording and playback switches.
Pop noise is muted by approx. 40 dB for a muting time of approx. 1 sec and is switched ON automatically during selection of function, recording and playback.

3.3 RF CIRCUIT

3.3.1 FM RF CIRCUIT

The RF Section is a separate system consisting of RF amplifier, local oscillator, and mixer. The IF stage is a IC and 1 Transistor direct amplifier, employing 3 ceramic filters to improve selectivity.
The multiplex circuit employs a TA7323P (IC for PLL MPX) to ensure an adequate voltage drop range of up to 5.5V, and the stereo indicator employs an LN217RP, a red angular LED.
The output of the multiplexer passes through a low-pass filter, which supresses the frequencies between 50 Hz and 10 kHz by ±1.0 dB.
1) muting, 2) full-time AFC, and 3) mono/stereo selection are attached circuits.
The muting circuit is designed so that the muting level can be adjusted by a preset resistor to cope with variations in transistor performance.

3.3.2 AM RF CIRCUIT

The intermediate frequency is 450 kHz. Coil and ceramic filters are used as selection elements.

3.3.3 LED TUNING CIRCUIT

The meter circuit reads the IF output of both the AM and FM signals.

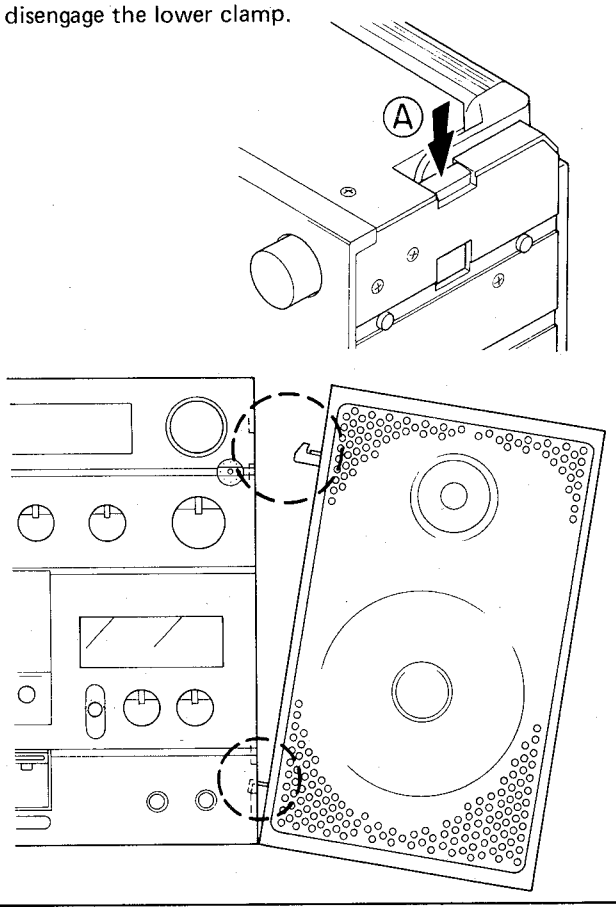
3.4 VOLTAGE CONVERSION

This unit may be converted to 110V operation by the Voltage Selector Switch (S005) located within the Battery Compartment.

4. UNIT DISASSEMBLY

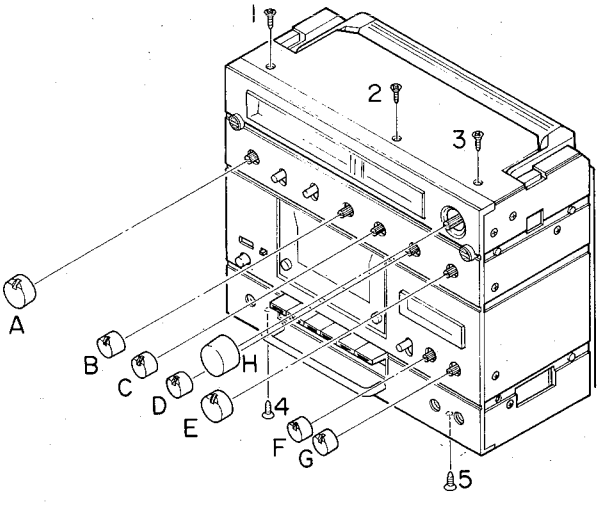
4.1 SPEAKER BOX REMOVAL

Depress reset button A and lift the body slightly to disengage the upper boss. Lift the speaker box to disengage the lower clamp.



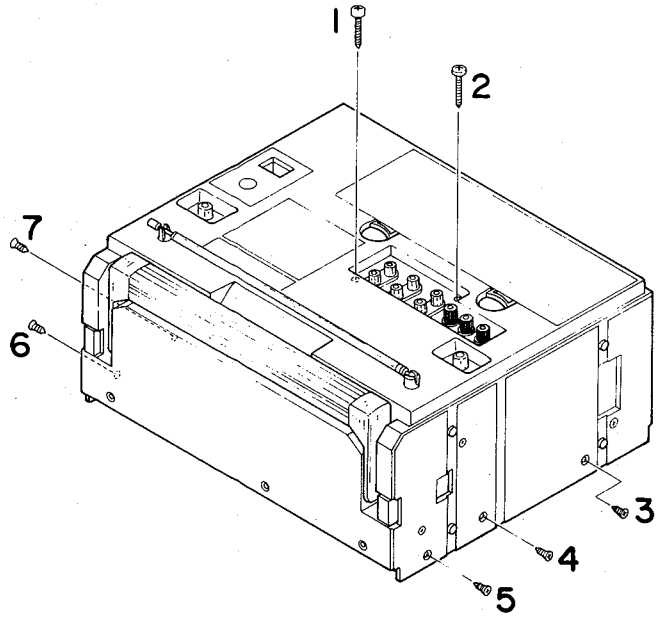
4.2 FRONT COVER REMOVAL

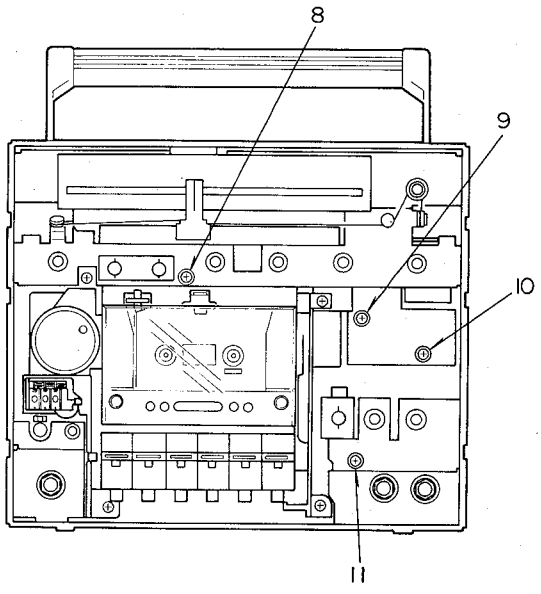
Remove knobs (A to H) and screws (1 to 5).



4.3 REAR COVER REMOVAL

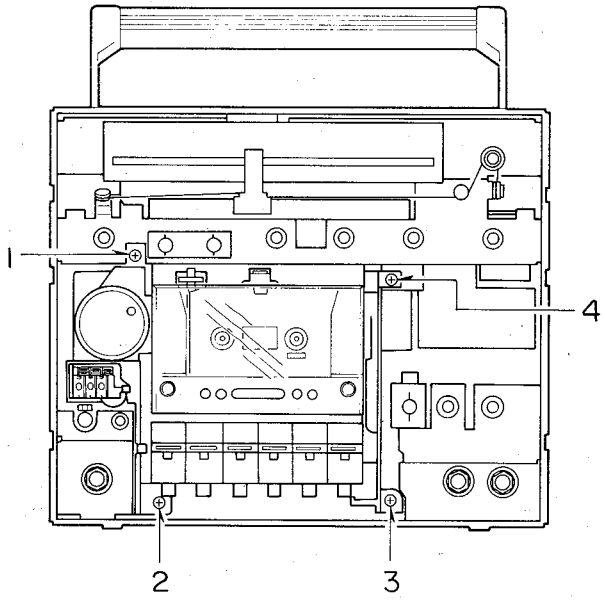
After removing the battery lid, remove 11 screws and remove the rear cover.





4.4 MECHANICAL PARTS REMOVAL

Remove screws (1 to 4).



5. SERVICE GUIDE

5.1 BATTERY VOLTAGE

What often happens when repairing a unit of this type is that you remedy the trouble without realizing that the battery is flat. When checking operation, always confirm that voltage is over 6.3V.

5.2 BATTERY POLARITY

If the polarity is wrong when the batteries are replaced, transistors and motor will be damaged. Avoid making this mistake.

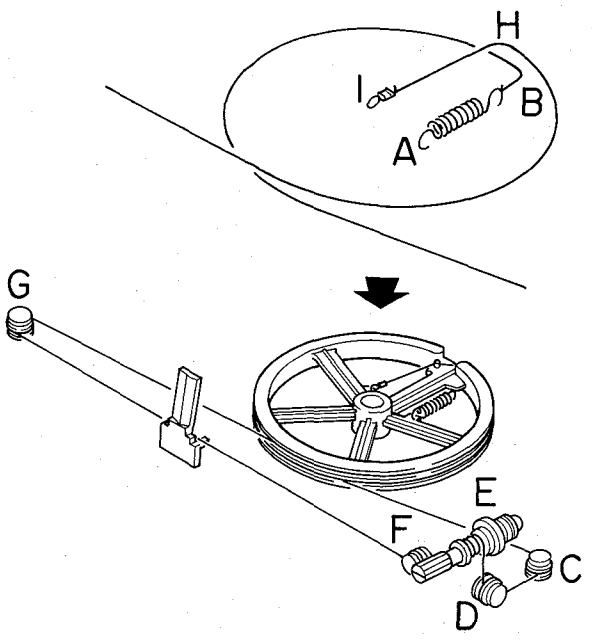
5.3 DIRTY HEAD

If magnetic materials from the tape or dust adhere to the heads, sound quality will deteriorate. To clean, wipe the heads with a soft cloth soaked in alcohol or carbon tetrachloride.

5.4 SERVICING NOTES

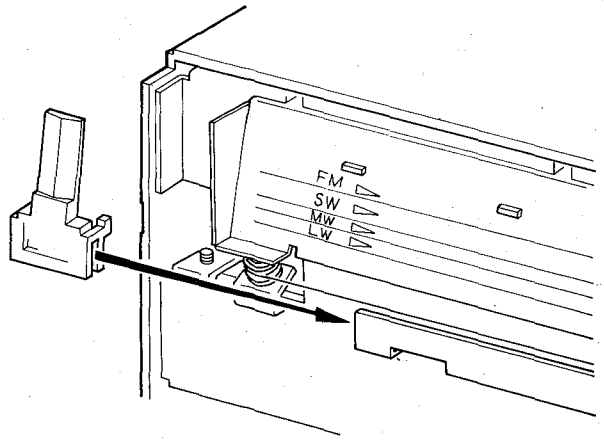
5.4.1 INSTALLING DIAL STRING

Route the string referring to the illustration.



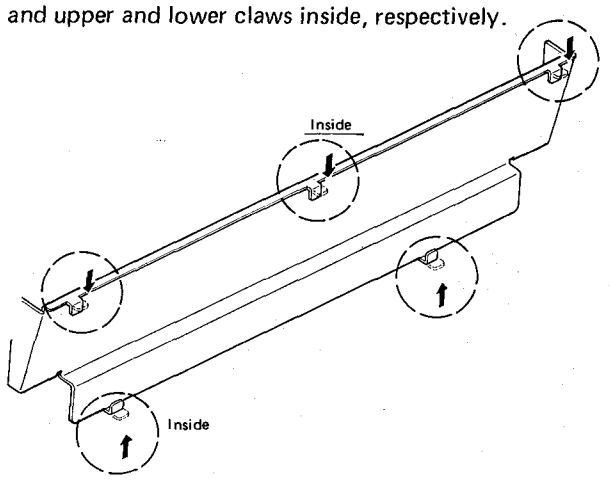
5.4.2 INSTALLING POINTER

After running the string between the right end of the guide and pulley, slide it to left to make the rest of the job easier.



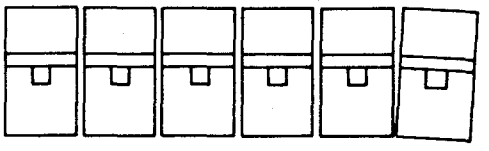
5.4.3 INSTALLING DIAL PLATE

Install the dial plate with right and left claws outside and upper and lower claws inside, respectively.



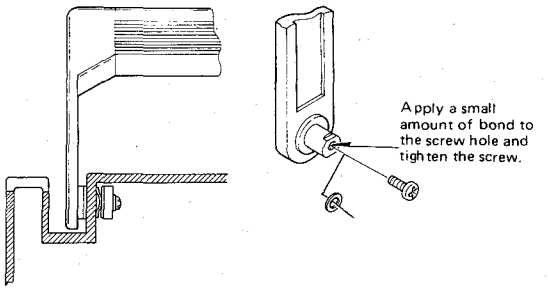
5.4.4 INSTALLING PUSH BUTTONS

Make sure that the pushbuttons are installed vertical to the panel surface.



5.4.5 MOUNTING THE HANDLE SUPPORT AND REAR COVER

Apply a small amount of bond to the support screw hole as a loosening prevention measure and tighten the screw.



5.5 TROUBLESHOOTING

The items listed below indicate the trouble most commonly encountered with the PMS7004/PMS7004S.

- Power supply is not turned ON.
  1. Batteries are flat.
  2. Broken fuse (F801).
  3. Incorrect connection of power connector (J804).
  4. Broken power cord.
- Abnormally low sound level

  When VU meters deflect:
  1. Defective power amplifier.
  2. Defective intermediate terminal.

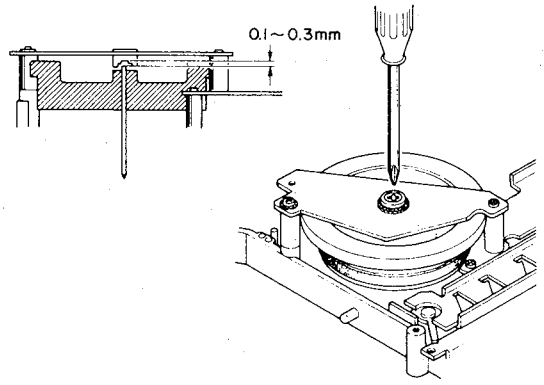
  When VU meters do not deflect:
  1. The muting circuit is ON.
  2. REC/PLAY switches (S202) have not returned fully.
- Distorted sound

  Does DC-DC converter voltage increase to 18V
  1. If does increase, check block.

6. MECHANICAL ADJUSTMENTS

6.1 ADJUSTING THE FLYWHEEL THRUST

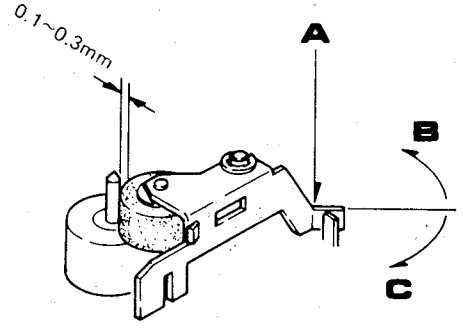
Using a Philips screwdriver, adjust the thrust screw on the flywheel bracket until the clearance between the capstan tail end and thrust bearing is 0.1 to 0.3 mm as shown. Adjustment must be effected by feel, as axial movement of the flywheel cannot be observed from above. Then paint-lock the screw.



6.2 ADJUSTING THE PAUSE TIMING

Set the unit in the play mode. Slowly press the pause button to stop the take-up reel. If necessary, adjust the bend angle of the pinch roller bracket arm (point A in the line drawing) until the clearance between the pinch roller and capstan is 0.1 to 0.3 mm.

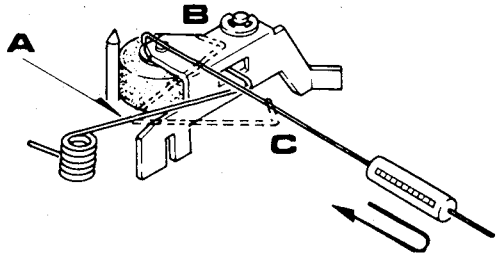
NOTE: To widen the clearance, make the bend angle smaller (in the direction of C). To make the clearance narrower, widen the bend angle (in the direction of B).



6.3 ADJUSTING THE PINCH ROLLER PRESSURE

Measure the pressure of the pinch roller using a gauge as shown. Draw the pinch roller in the direction of the arrow to detach it from the capstan shaft and gradually let it return toward the capstan. Read the gauge at the time when the pinch roller starts turning. The standard pressure is 300 ±50g. If the pressure is out of the range, bend the pinch roller spring around point A in the direction of B or C.

NOTE: To increase the pressure, bend in the direction of B. To decrease the pressure, bend in the direction of C.



6.4 ADJUSTING THE PLAY TIMING

It is normal that when the PLAY button is depressed, the take-up reel table turns first, then the pinch roller rotates. The reel table and pinch roller must not start turning at the same time.

NOTE: Make certain that this operation is carried out by depressing the play button slowly without loading a tape.

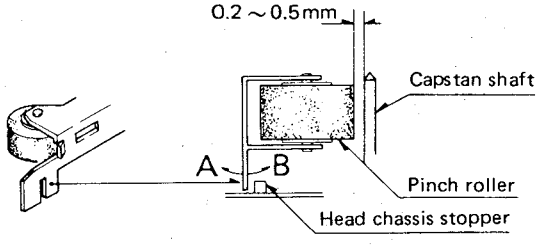
1. CHECKING FOR ADJUSTMENT

Slowly depress the PLAY button to start the take-up reel turning. Check whether or not the clearance between the pinch roller and capstan is 0.2 to 0.5 mm.

2. ADJUSTMENT

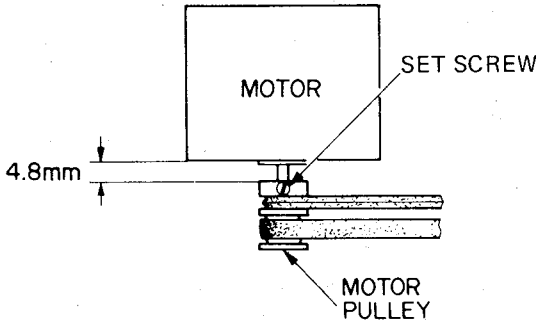
Bend the pinch roller bracket at the point that touches the head chassis stopper. In the line drawing, bending left reduces the clearance between the capstan and pinch roller.

NOTE: Make certain that the pinch roller bracket does not touch the head chassis stopper in the play mode.



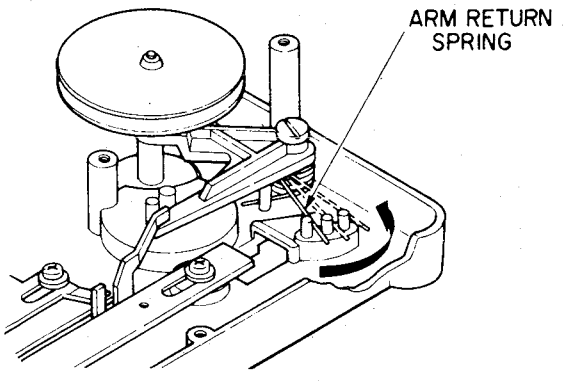
6.5 POSITIONING THE MOTOR PULLEY

Loosen the set screw and adjust the motor pulley position until the clearance between the pulley and motor is 4.8 mm as shown. Tighten the set screw.



6.6 ADJUSTING THE REQIND IDLER SIDE PRESSURE

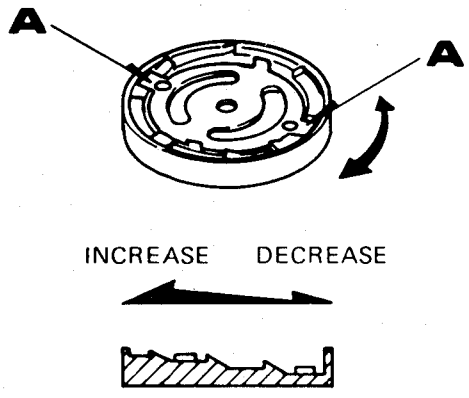
Make certain that in the rewind mode, the rewind idler does not slip on the supply reel table when held by hand. If it slips, gradually change the hanging position of the rewind idler arm return spring on the chassis, in the direction of the arrow, until it ceases to slip.



6.7 ADJUSTING THE PLAY TORQUE

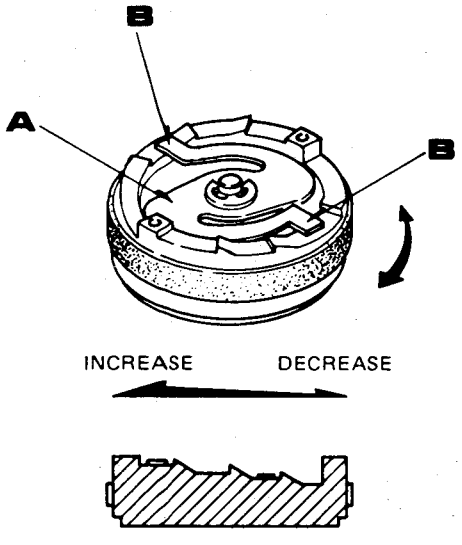
Put the two pawls of the circular plate spring in a proper stepped position on the reel rest. The adjustable torque range is 40 to 70 g-cm.
To increase the torque, put the pawls on a shallow step. For lower torque, put them on a deeper step.

- Checking the take-up clutch for sliding
  Make certain that the flywheel rotates freely when the reel table is locked. A flywheel should not revolve irregularly or stop.



6.8 ADJUSTING THE FAST FORWARD AND REWIND TORQUE

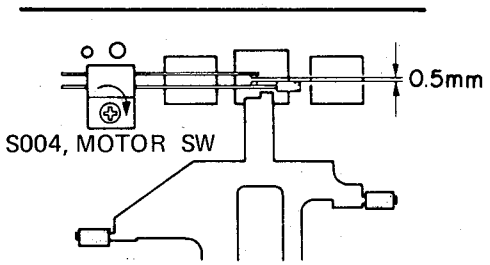
The fast forward and rewind idler has a torque adjust plate spring (part A in the line drawing), which has two pawls (part B) at its ends. Set the pawls in the proper step. To increase the torque, set the pawls in the shallowest step. For lower torque, set in the deepest step.



6.9 POSITIONING THE SWITCHES

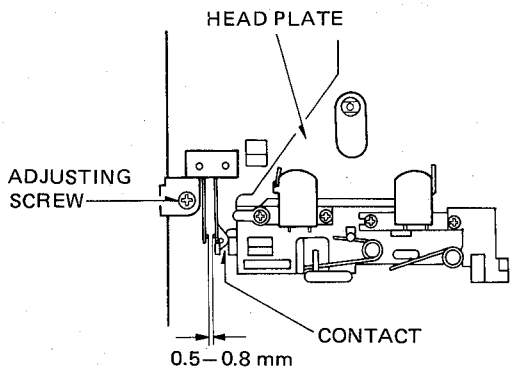
6.9.1 MOTOR SWITCH

Turn the motor switch in the direction of the arrow until it is screwed tight. Make certain that the contact gap is wider than 0.5 mm.



6.9.2 PLAY START MUTING SWITCH

In the stop mode, loosen the screw fixing the muting switch and adjust the adjusting screw so that the clearance between the muting switch contacts is 0.5—0.8 mm when the muting switch comes in contact with the head plate.



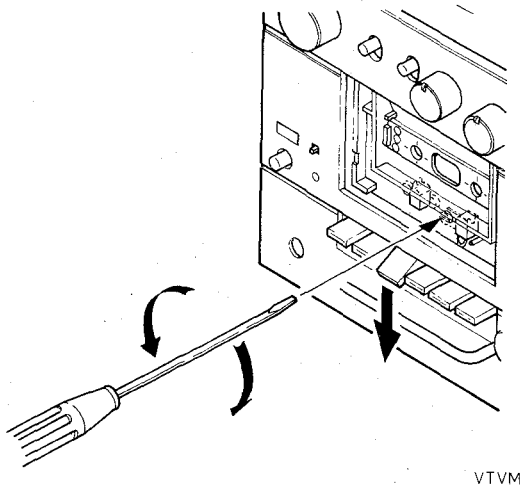
7. ELECTRICAL ADJUSTMENTS AND MEASUREMENTS

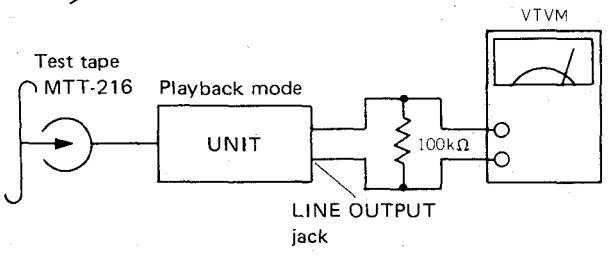
7.1 PRECAUTION FOR ADJUSTMENT AND MEASUREMENT

1. Whenever adjusting or measuring any circuit, wipe the heads clean with a soft cloth moistened with alcohol or carbon tetrachloride. Also be sure to demagnetize the heads, capstan, and similar parts.
2. The voltage at any electrical point may vary with the input signal, so measure the voltage under a non-signal condition.
3. Transistors are affected by microvoltage. Whenever measuring them, use a VTVM which has a high enough internal resistance and input sensitivity to eliminate errors in measurement.
4. In adjustment or measurement, set the TONE control to its mechanical center ("0") unless otherwise specified.
5. For measurements of output, connect a pure 2.5Ω resistor across the external speaker terminal and use a VTVM. Unless otherwise specified, adjust the VOLUME control for the standard output level, 50 mW (0.35V/2.5Ω).

7.2 AZIMUTH ADJUSTMENT

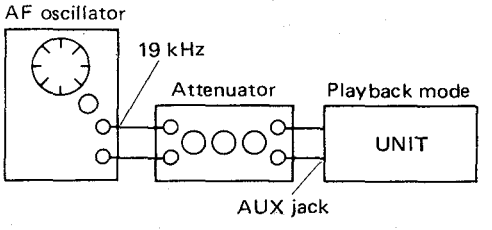
1. Set TAPE SELECTOR switch to NORMAL.
2. Reporduce the 10 kHz signal on test tape MTT-216 and turn the screw for azimuth adjustment so that output voltage becomes maximum.
3. When the maximum points of L and R channels are different, adjust it to the points where the output levels of the L and R channels are equal.
4. Be sure to apply paint to lock the screws after adjustment.





7.3 MPX FILTER ADJUSTMENT

1. Set the unit to play mode.
2. Apply a 19 kHz, signal to AUX jack.
3. Adjust LX01(L) and LX02(R) for minimum output level at the LINE OUTPUT jack.

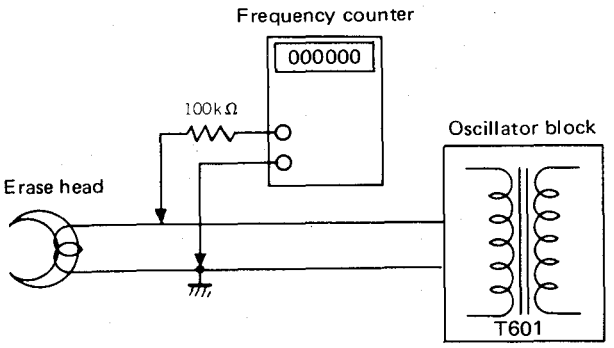


7.4 PLAYBACK LEVEL ADJUSTMENT

1. Set the TAPE SELECTOR switch to NORMAL.
2. Play the MTT-150 test tape. Adjust R211 so that the VU meter (G001) reading becomes the same as that of the R ch.

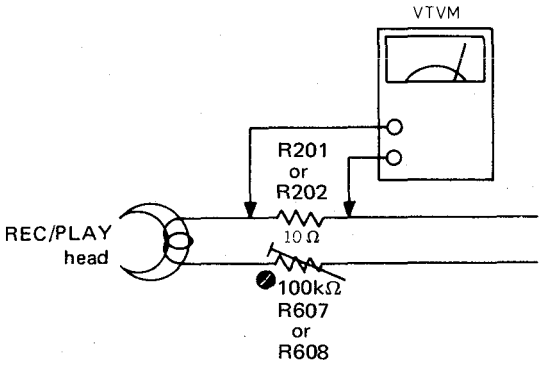
7.5 BIAS OSCILLATOR FREQUENCY ADJUSTMENT

1. Set the unit to recording mode.
2. Adjust T601 so that when ISS switch is 2 position, the bias oscillator frequency becomes as follows.
   48 kHz CRS-3504



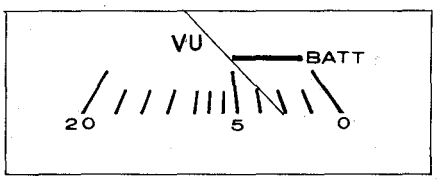
7.6 BIAS CURRENT ADJUSTMENT

1. Set the unit to recording mode.
2. Set the TAPE SELECTOR switch to NORMAL.
3. Adjust R607 and R608 so that the voltage of both R201 and R202 (10Ω) entering the REC/PLAY head in series reads 3.8 mV.
4. When the TAPE SELECTOR switch is set to CrO_2, the voltage should be approx. 6 mV.



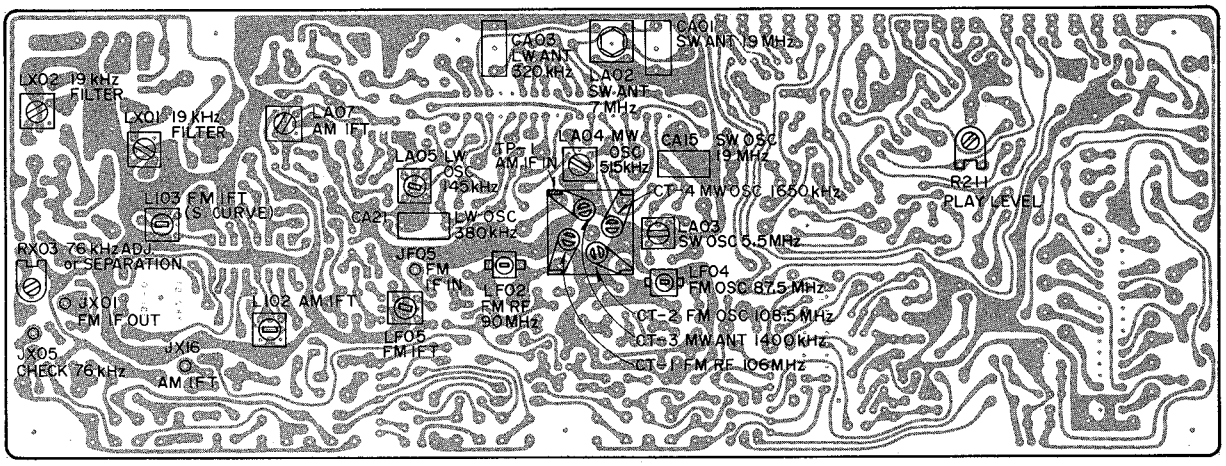
7.7 ADJUSTING BATTERY CHECK CIRCUIT

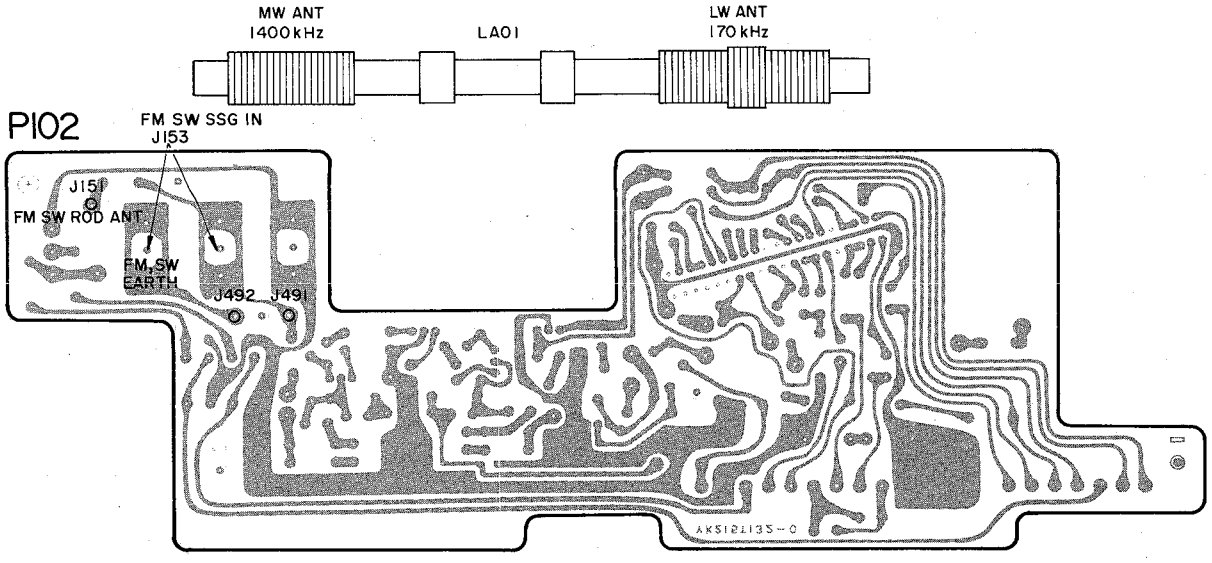
1. Adjust the power supply to 6.75V.
2. Set the FUNCTION switch to TAPE.
2'. Depress FF or REW button.
3. Adjust R605 so that the meter pointer is at the left end of the BATT zone.



8. ADJUSTMENT POINTS

P201





9. TUNER ADJUSTMENT

9.1 FM ADJUSTMENT PROCEDURE

(FUNCTION switch . . . . FM, MODE switch . . . . MONO)

Procedure	Signal generator connection	Signal generator output	Tuning dial	Measurement instrument connection	Adjustment point	Remarks
1	Connect SG to JF05	10.7 MHz Sweep	–	Connect oscilloscope vertical jack to JX01 or ground (JX12) through diode.	LF05 L103	Rotate each core and adjust so that oscilloscope waveforms are highest and symmetrical on both sides.
2	Connect SG to J491 or J153 through the dummy antenna.	87.5 MHz (Modulated)	87.5 MHz (Maximum variable capacitor capacity)	Connect the output meter to the LINE OUTPUT jack.	OSC coil LF04	Adjust so that the output meter reads a maximum.
3		108.5 MHz (Modulated)	108.5 MHz (Minimum variable capacitor capacity)		Trimmer CT-2	
4	Repeat procedures 2 and 3.					
5	Connect SG to J491 or J153 through the dummy antenna.	90 MHz (Modulated)	90 MHz	Connect the output meter to the LINE OUTPUT jack.	LF02	Adjust so that the output meter reads a maximum.
6		106 MHz (Modulated)	106 MHz		Trimmer CT-1	
7	Repeat procedures 5 and 6.					

NOTES:
1. Connect the negative (–) jack of the oscillator to the ground (– ground) of the unit.
2. Set oscillator output to 1 kHz, 40 kHz DEV.
3. Adjust oscillator output to obtain a minimum.

9.2 FM STEREO ADJUSTMENT PROCEDURE

(FUNCTION switch . . . . FM, MODE switch . . . . STEREO)

Procedure	Signal generator connection	Signal generator output	Tuning dial	Measurement instrument connection	Adjustment point	Remarks
1	Connect SG to J491 or J153 through the dummy antenna. 40 kHz Deviation 1 kHz Pilot 8%	19 kHz Modulation	98 MHz	Connect output meter to LINE OUTPUT jack.	Preset resistor LX01 LX02	Minimize the L and R channel output.
2		L Channel			Preset resistor RX03	Adjust preset resistor so that output meter reading of R channel indicates minimum output.
3		R Channel				Adjust preset resistor so that output meter reading of L channel indicates minimum output.
4	Repeat procedures 2 and 3.					

9.3 AM ADJUSTMENT PROCEDURE (PMS7004)

(FUNCTION switch . . . . AM-MW)

Procedure	Signal generator connection	Signal generator output	Tuning dial	Measurement instrument connection	Adjustment point	Remarks
1	Connect SG to TP-1	450 kHz Sweep ±35 kHz	—	Connect oscilloscope to JX16 (ground lead to JX12).	LA07 L102	Rotate each core and adjust so that oscilloscope waveforms are highest and symmetrical on both sides.
2	Radiate SG output to antenna coil through loop antenna.	515 kHz (Modulated)	515 kHz (Maximum variable capacitor capacity)	Connect output meter to LINE OUTPUT jack.	OSC coil LA04	Adjust so that the output meter indicates a maximum.
3		1,650 kHz (Modulated)	1,650 kHz (Minimum variable capacitor capacity)		Trimmer CT-4	
4	Repeat procedures 2 and 3.					
5	Radiate SG output to antenna coil through loop antenna.	600 kHz (Modulated)	600 kHz	Connect output meter to LINE OUTPUT jack.	ANT coil LA01	Adjust so that the output meter indicates a maximum.
6		1,400 kHz (Modulated)	1,400 kHz		Trimmer CT-3	
7	Repeat procedures 5 and 6.					

NOTES: 1. Connect the negative (−) jack of the oscillator to ground (— ground) of the unit during adjustment.
2. Oscillator output should be 1 kHz with 30% modulation. 3. Adjust oscillator output to obtain a minimum.

(FUNCTION switch . . . . AM-LW)

Procedure	Signal generator connection	Signal generator output	Tuning dial	Measurement instrument connection	Adjustment point	Remarks
1	Radiate SG output to antenna coil through loop antenna.	145 kHz (Modulated)	145 kHz (Maximum variable capacitor capacity)	Connect output meter to LINE OUTPUT jack.	OSC coil LA05	Adjust so that the output meter indicates a maximum.
2		380 kHz (Modulated)	380 kHz (Minimum variable capacitor capacity)		Trimmer CA21	
3	Repeat procedures 2 and 3.					
4	Radiate SG output to antenna coil through loop antenna.	170 kHz (Modulated)	170 kHz	Connect output meter to LINE OUTPUT jack.	ANT coil LA01	Adjust so that the output meter indicates a maximum.
5		320 kHz (Modulated)	320 kHz		Trimmer CA03	
6	Repeat procedures 5 and 6.					

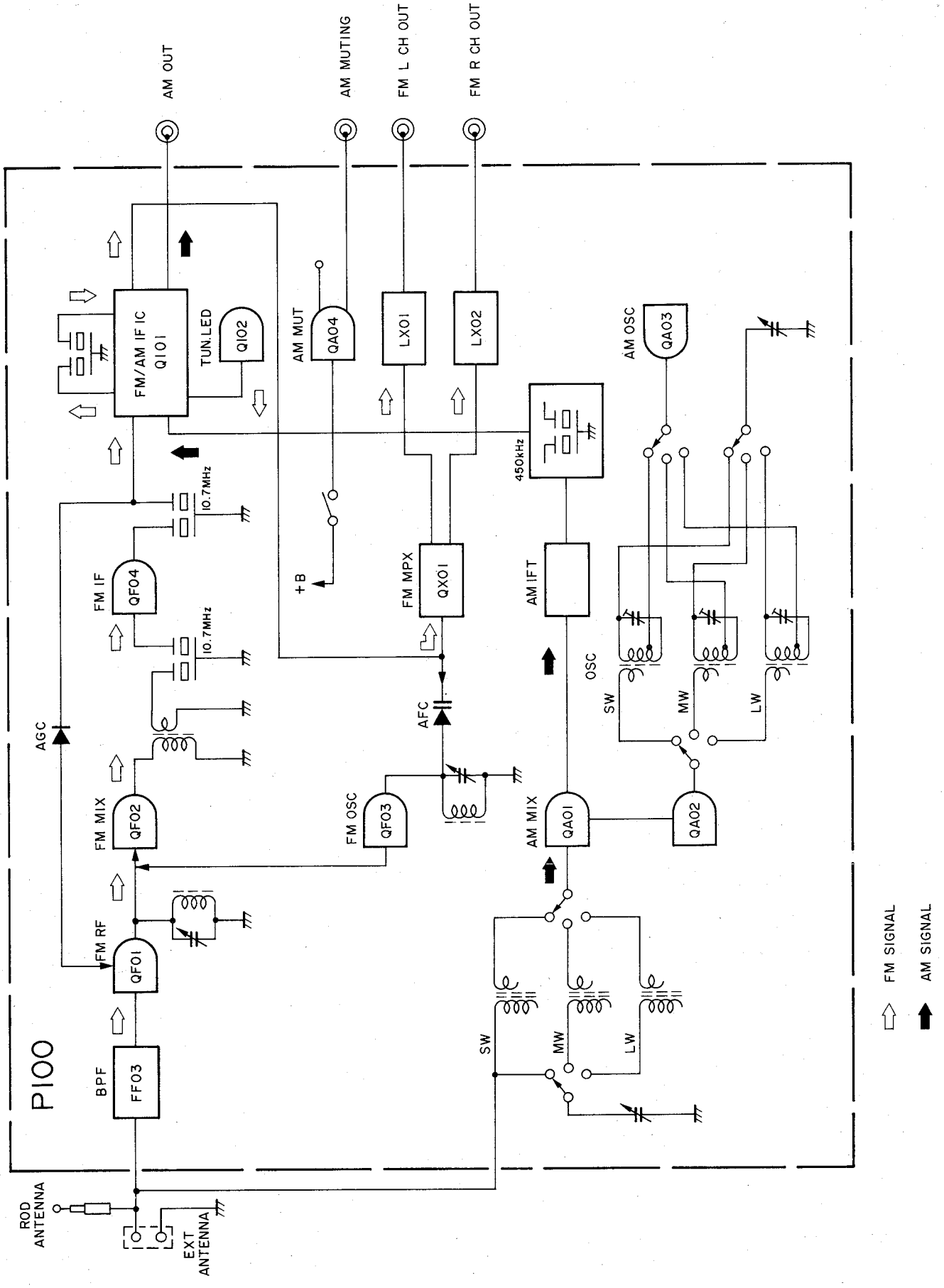
NOTES: 1. Connect the negative (−) jack of the oscillator to ground (— ground) of the unit during adjustment.
2. Oscillator output should be 1 kHz with 30% modulation. 3. Adjust oscillator output to obtain a minimum.

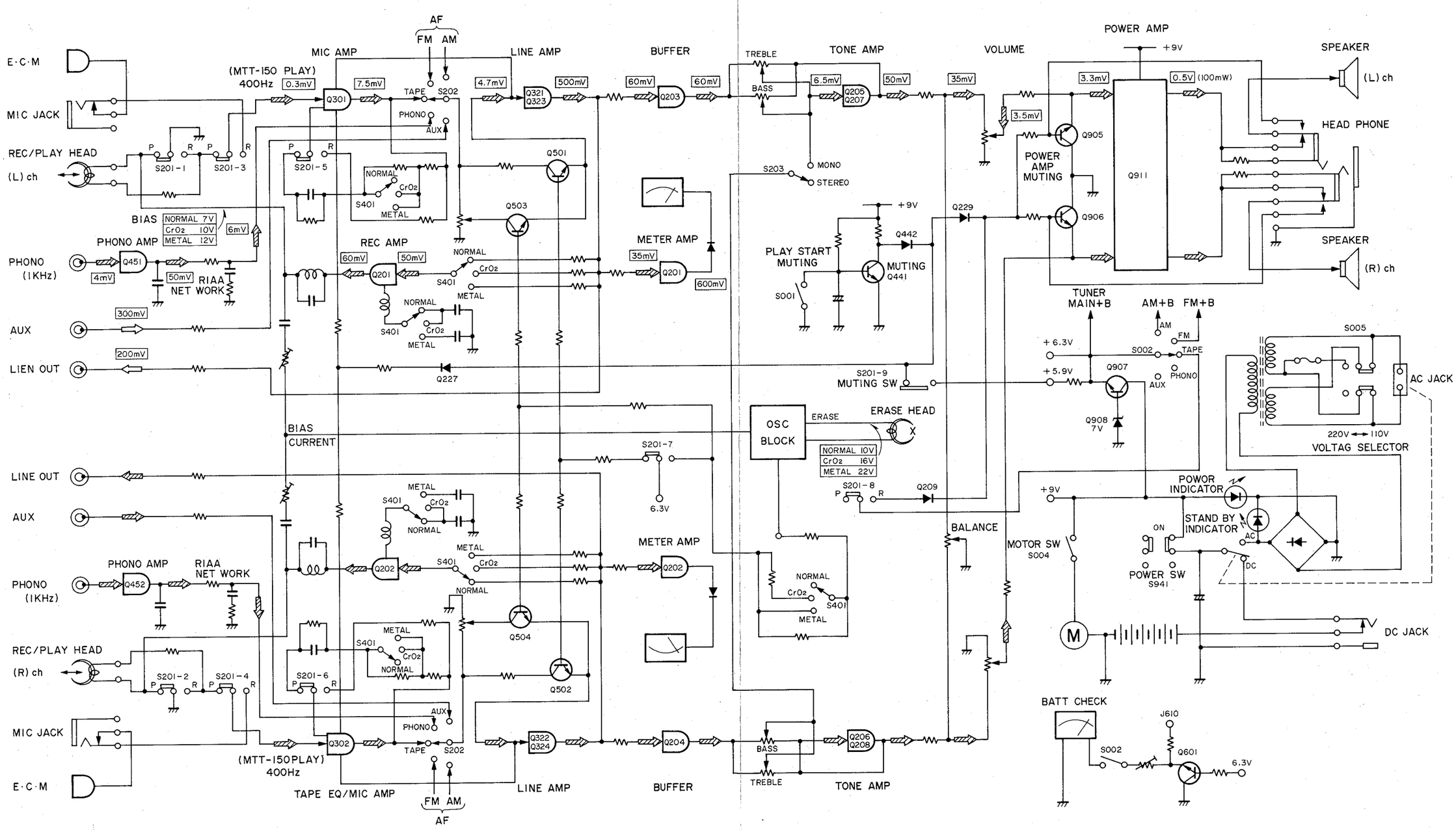
(FUNCTION switch . . . . AM-SW)

Procedure	Signal generator connection	Signal generator output	Tuning dial	Measurement instrument connection	Adjustment point	Remarks
1	Radiate SG output to antenna coil through dummy antenna. (30 ohm plus 10 pF)	5.5 MHz (Modulated)	5.5 MHz (Maximum variable capacitor capacity)	Connect output meter to LINE OUTPUT jack.	OSC coil LA03	Adjust so that the output meter indicates a maximum.
2		19 MHz (Modulated)	19 MHz (Minimum variable capacitor capacity)		Trimmer CA15	
3	Repeat procedures 2 and 3.					
4	Radiate SG output to antenna coil through dummy antenna.	7 MHz (Modulated)	7 MHz	Connect output meter to LINE OUTPUT jack.	ANT coil LA02	Adjust so that the output meter indicates a maximum.
5		19 MHz (Modulated)	19 MHz		Trimmer CA01	
6	Repeat procedures 5 and 6.					

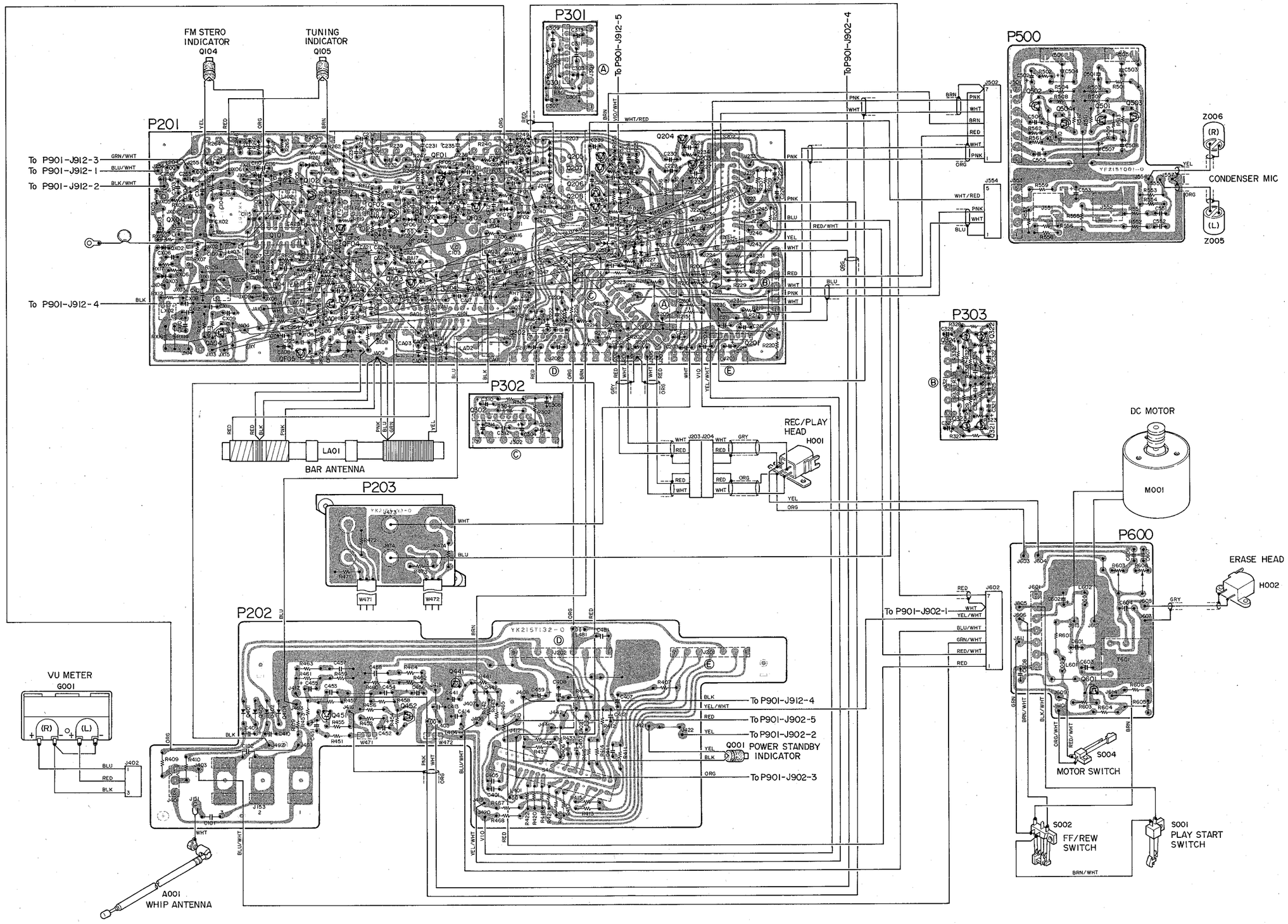
NOTES: 1. Connect the negative (−) jack of the oscillator to ground (— ground) of the unit during adjustment.
2. Oscillator output should be 1 kHz with 30% modulation. 3. Adjust oscillator output to obtain a minimum.

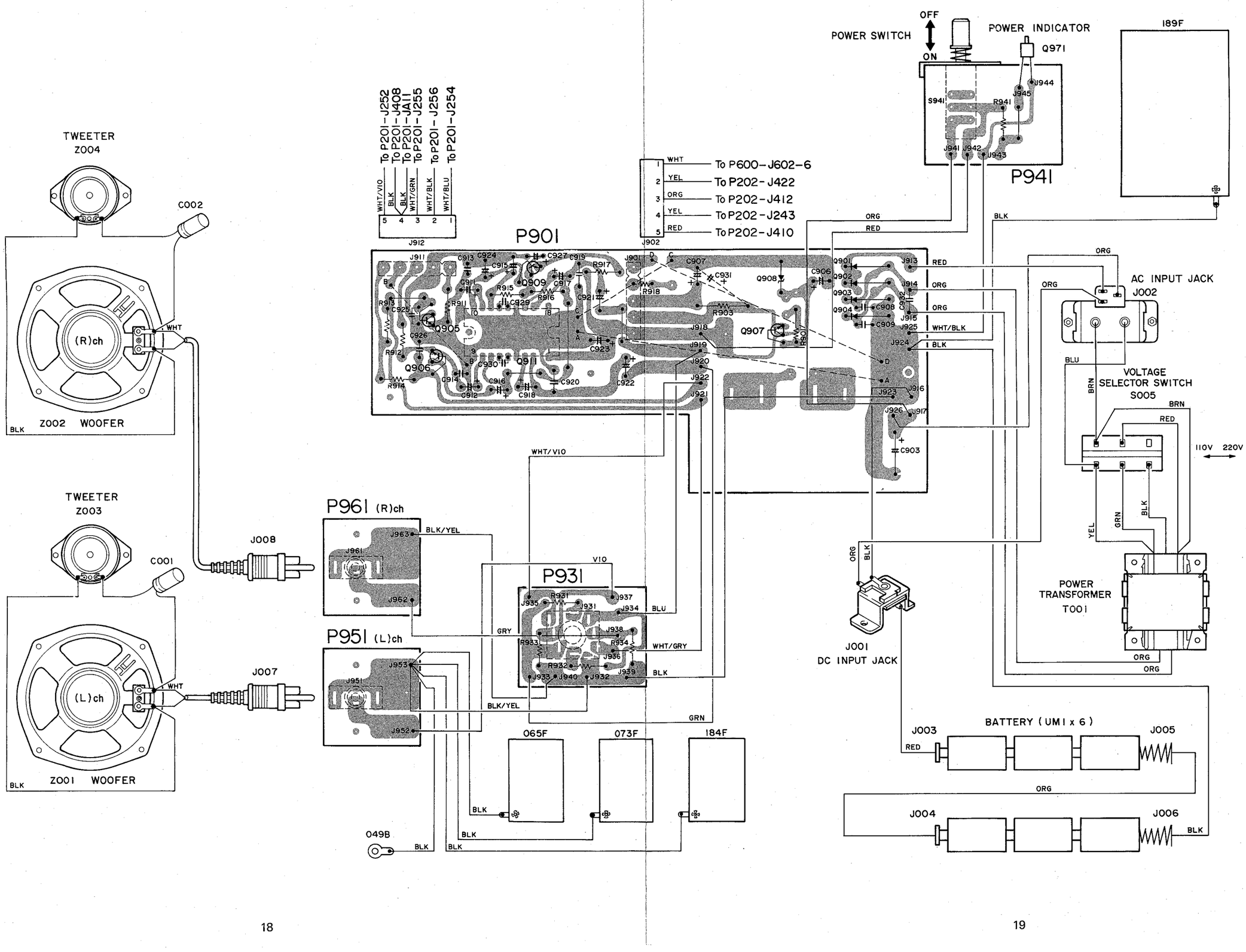
10. BLOCK DIAGRAM




AF
FM AM
E·C·M
MIC JACK
REC/PLAY HEAD
(L) ch
(MTT-150 PLAY)
400Hz
0.3mV
MIC AMP
7.5mV
Q301
TAPE
S202
PHONO
AUX
4.7mV
LINE AMP
Q321
Q323
500mV
60mV
BUFFER
Q203
60mV
TREBLE
BASS
TONE AMP
6.5mV
Q205
Q207
50mV
35mV
VOLUME
3.5mV
POWER AMP
+9V
3.3mV
0.5V (100mW)
SPEAKER
(L) ch
HEAD PHONE
Q905
POWER AMP MUTING
Q911
Q906
SPEAKER
(R) ch
S201-1
S201-3
S201-5
P
R
NORMAL
CrO2
METAL
S401
Q501
Q503
S203
MONO
STEREO
BIAS
NORMAL 7V
CrO2 10V
METAL 12V
6mV
PHONO AMP
PHONO
(1KHz)
Q451
4mV
50mV
RIAA
NET WORK
REC AMP
60mV
50mV
Q201
METER AMP
35mV
600mV
+9V
Q229
Q442
PLAY START MUTING
MUTING
Q441
S001
TUNER
MAIN+B
AM+B
FM+B
AM
FM
TAPE
+6.3V
+5.9V
S002
Q907
AUX
PHONO
Q908
7V
S005
AC JACK
220V ↔ 110V
VOLTAG SELECTOR
300mV
AUX
200mV
LIEN OUT
Q227
S201-9
MUTING SW
BIAS
CURRENT
S201-7
6.3V
OSC
BLOCK
ERASE
ERASE HEAD
NORMAL 10V
CrO2 16V
METAL 22V
S201-8
Q209
POWOR
INDICATOR
STAND BY
INDICATOR
AC
DC
ON
POWER SW
S941
+9V
BALANCE
MOTOR SW
S004
M
DC JACK
BATT CHECK
J610
Q601
6.3V
LINE OUT
AUX
PHONO AMP
RIAA
NET WORK
PHONO
(1KHz)
Q452
REC/PLAY HEAD
(R) ch
S201-2
S201-4
S201-6
Q504
Q502
Q202
MIC JACK
E·C·M
(MTT-150PLAY)
400Hz
Q302
TAPE EQ/MIC AMP
Q322
Q324
LINE AMP
Q204
BUFFER
Q206
Q208
TONE AMP
TREBLE
BASS

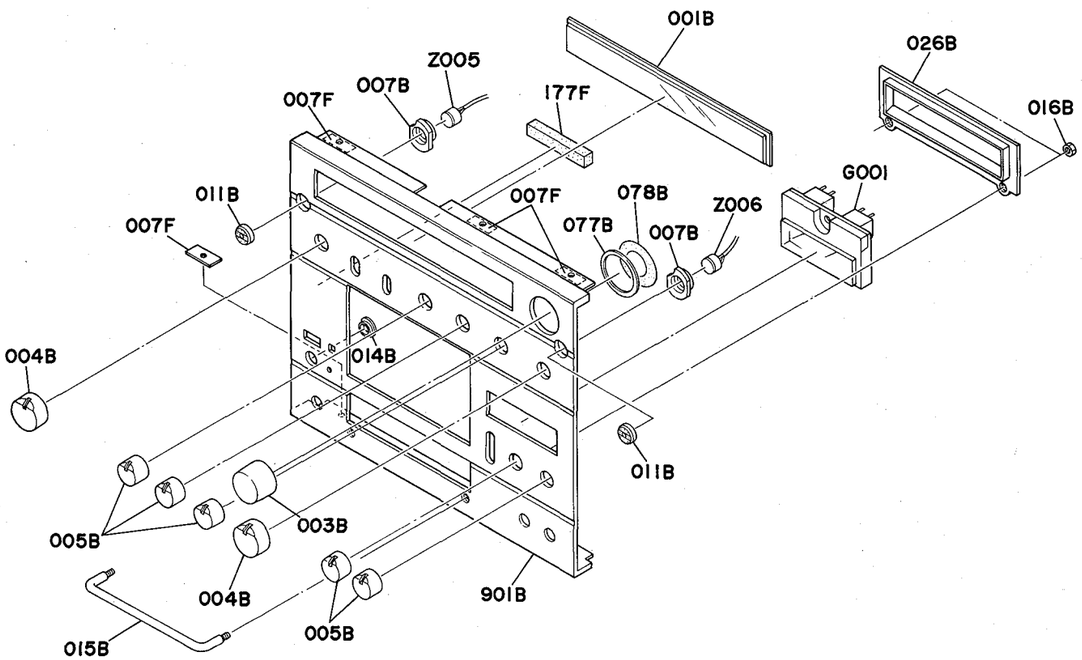
11. CIRCUIT BOARD DIAGRAM




TWEETER
Z004
C002
(R)ch
WHT
BLK
Z002 WOOFER
TWEETER
Z003
C001
(L)ch
WHT
BLK
Z001 WOOFER
J008
J007
WHT/VIO
BLK
BLK
WHT/GRN
WHT/BLK
WHT/BLU
To P201-J252
To P201-J408
To P201-JA11
To P201-J255
To P201-J256
To P201-J254
J912
P901
J902
1 WHT To P600-J602-6
2 YEL To P202-J422
3 ORG To P202-J412
4 YEL To P202-J243
5 RED To P202-J410
POWER SWITCH
OFF
ON
POWER INDICATOR
Q971
S941
R941
J941 J942 J943 J944 J945
P941
189F
ORG
RED
BLK
AC INPUT JACK
J002
VOLTAGE
SELECTOR SWITCH
S005
110V 220V
BLU
BRN
RED
YEL
GRN
BLK
POWER
TRANSFORMER
T001
ORG
BLK
J001
DC INPUT JACK
P961 (R)ch
J961 J962 J963
BLK/YEL
P951 (L)ch
J951 J952 J953
BLK/YEL
P931
J931 J932 J933 J934 J935 J936 J937 J938 J939 J940
R931 R932 R933 R934
VIO
BLU
GRY
WHT/GRY
BLK
GRN
WHT/VIO
065F
073F
184F
049B
BLK
BLK
BLK
BLK
BATTERY (UM1 x 6)
J003
RED
J005
ORG
J004
J006
BLK
C903
Q901 Q902 Q903 Q904 Q905 Q906 Q907 Q908 Q909 Q911
J911 J913 J914 J915 J916 J917 J918 J919 J920 J921 J922 J923 J924 J925 J926
WHT/BLK
BLK

2. EXPLODED VIEWS AND PARTS LIST

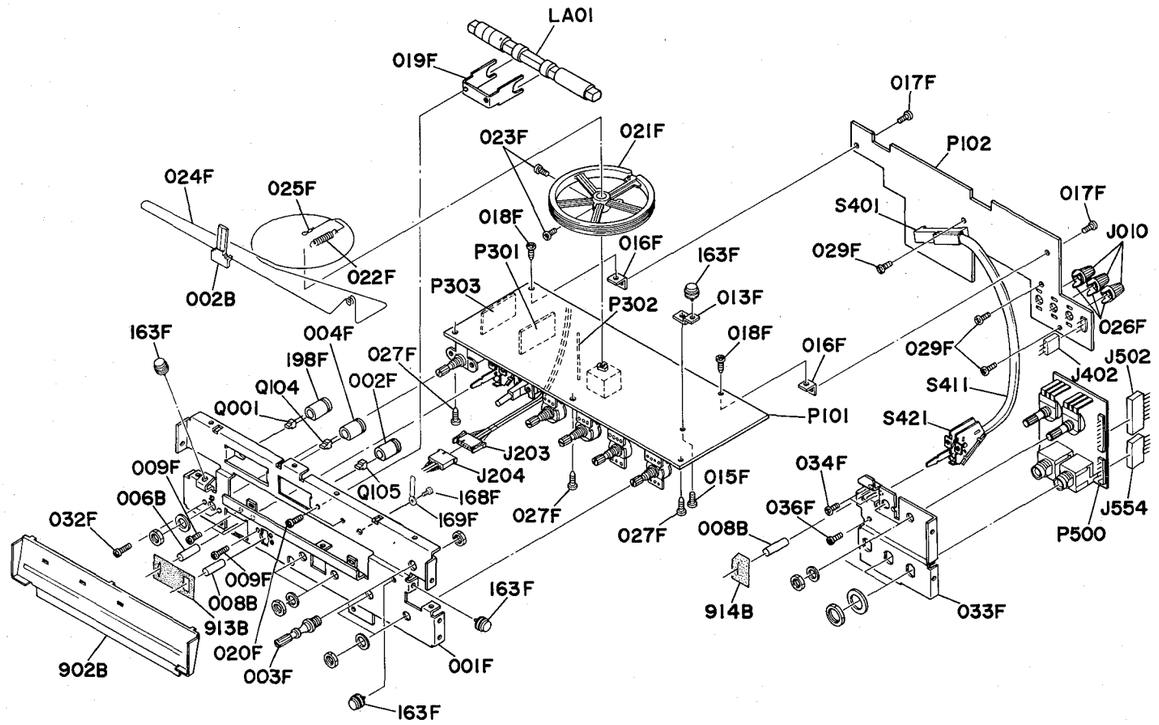
12.1 [P01-99] Front Panel



REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
A	1	215T063400	Front Panel Assembly
001B	1	207T158010	Window, Dial
007B	2	207T271010	Holder, Mic
011B	2	207T053030	Cover, Mic
014B	1	3448259120	Bushing, Power Switch
015B	1	4282051020	Guide, Mecha Button
016B	2	53110303A9	Hexagon Nut
026B	1	4282259010	Bushing, Mecha Button
077B	1	207T053010	Cover, Tuning
078B	1	207T053020	Cover, Tuning
901B	1	215T063010	Escutcheon, Front Panel
177F	1	215T056020	Butter

FEF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
003B	1	207T154010	Knob, Tuning
004B	2	207T154020	Knob, Function/Volume
005B	5	207T154030	Knob
007F	4	207T118020	Spacer
G001	1	IM12071020	D.C. Meter
Z005	1	MS50090070	Mic Unit
Z006	1	MS50090070	Mic Unit

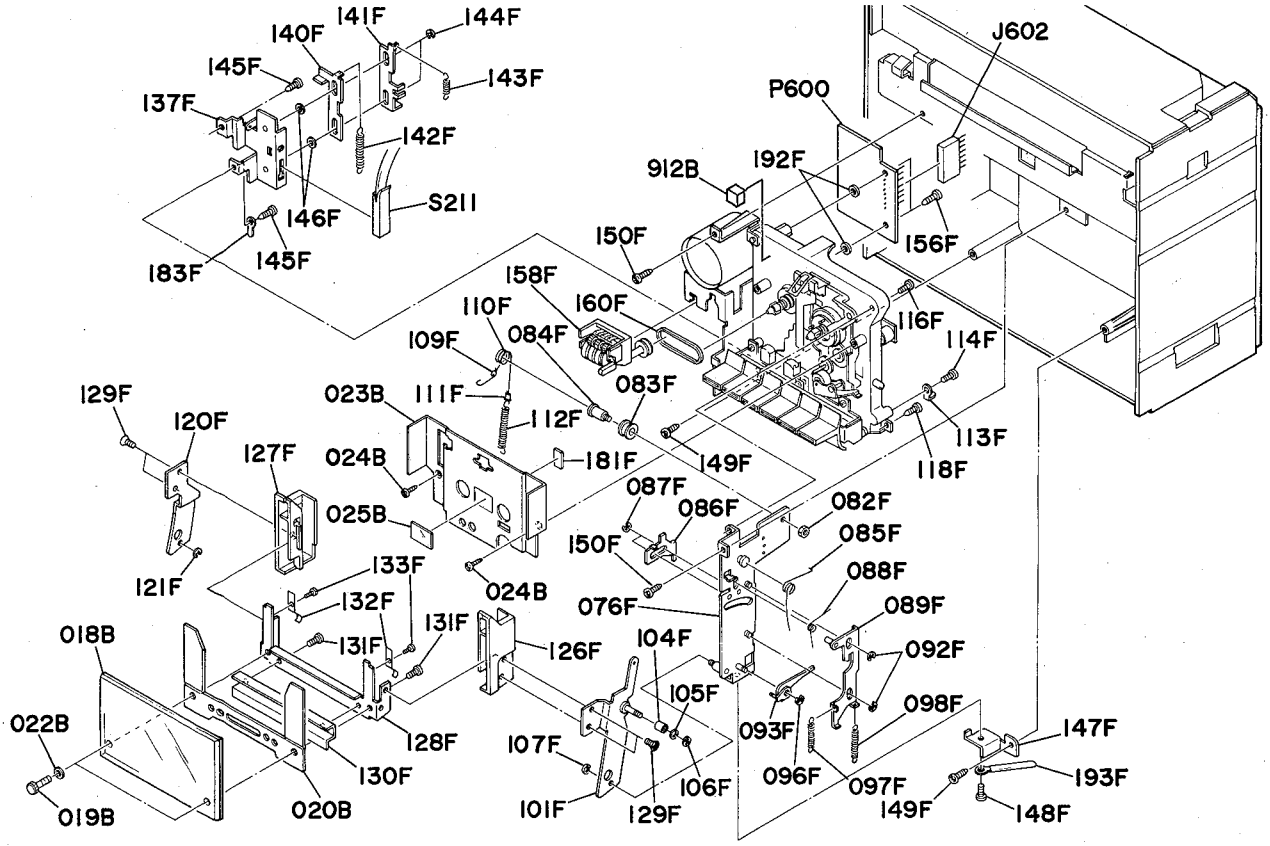
12.2 [P02-99] Front Bracket and Electrical Parts



REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION	
002B	1	4282103010	Pointer	
006B	1	4282154030	Knob, Mode Switch	
008B	2	4282154040	Knob	
902B	1	207T302050	Dial	
913B	1	215T107010	Sheet	
914B	1	215T107020	Sheet	
001F	1	207T160200	Bracket, Front	
002F	1	4279271010	Holder, LED	
003F	1	207T112060	Shaft, Tuning	
004F	1	4279271010	Holder, LED	
009F	2	51060305A9	P.H.M. Screw	P3 x 5
013F	1	207T160180	Bracket	
015F	1	51100305A9	B.H.M. Screw	B3 x 5
016F	2	207T160080	Bracket	
017F	2	51100305A9	B.H.M. Screw	B3 x 5
018F	2	51280306B0	B.H. Tapped Screw	B3 x 5
019F	1	4123271010	Holder	
020F	2	51100305B9	B.H.M. Screw	B3 x 5
021F	1	4123159010	Drum	
022F	1	4123115030	Spring	
023F	2	51064019A9	P.H.M. Screw	
024F	1	72071605A0	String (150)	
025F	1	56302030G0	Eyelet	
026F	3	207T160010	Bracket	
027F	3	51280306B0	B.H. Tapped Screw	B3 x 6
029F	3	51280308B0	B.H. Tapped Screw	B3 x 8

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION	
032F	2	51100305A9	B.H.M. Screw	B3 x 5
033F	1	207T160210	Bracket	
034F	2	51100305A9	B.H.M. Screw	B3 x 5
036F	1	51100305A9	B.H.M. Screw	B3 x 5
163F	4	2276262500	Pulley (K)	
168F	1	51280305B0	B.H. Tapped Screw	B3 x 5
169F	1	4220005020	Clamper	
198F	1	4279271010	Holder, LED	
J203	1	YJ10001610	Jack	
J204	1	YP10002250	Plug	
J402	1	YJ06001040	Jack (3P)	
J502	1	YJ06001060	Jack (7P)	
J554	1	YJ06001050	Jack (5P)	
LA01	1	LF11400990	Antenna Coil	
Q001	1	HI10014020	L.E.D. LN217RP	
Q104	1	HI10014020	L.E.D. LN217RP	
Q105	1	HI10014020	L.E.D. LN217RP	
S401	1	SS08030070	Slide Switch, Tape	
S411	1	SB11910030	Switch Band, FLX	
S421	1	SC00030020	Lever Switch	
J010	3	YL03010240	Terminal, Antenna	

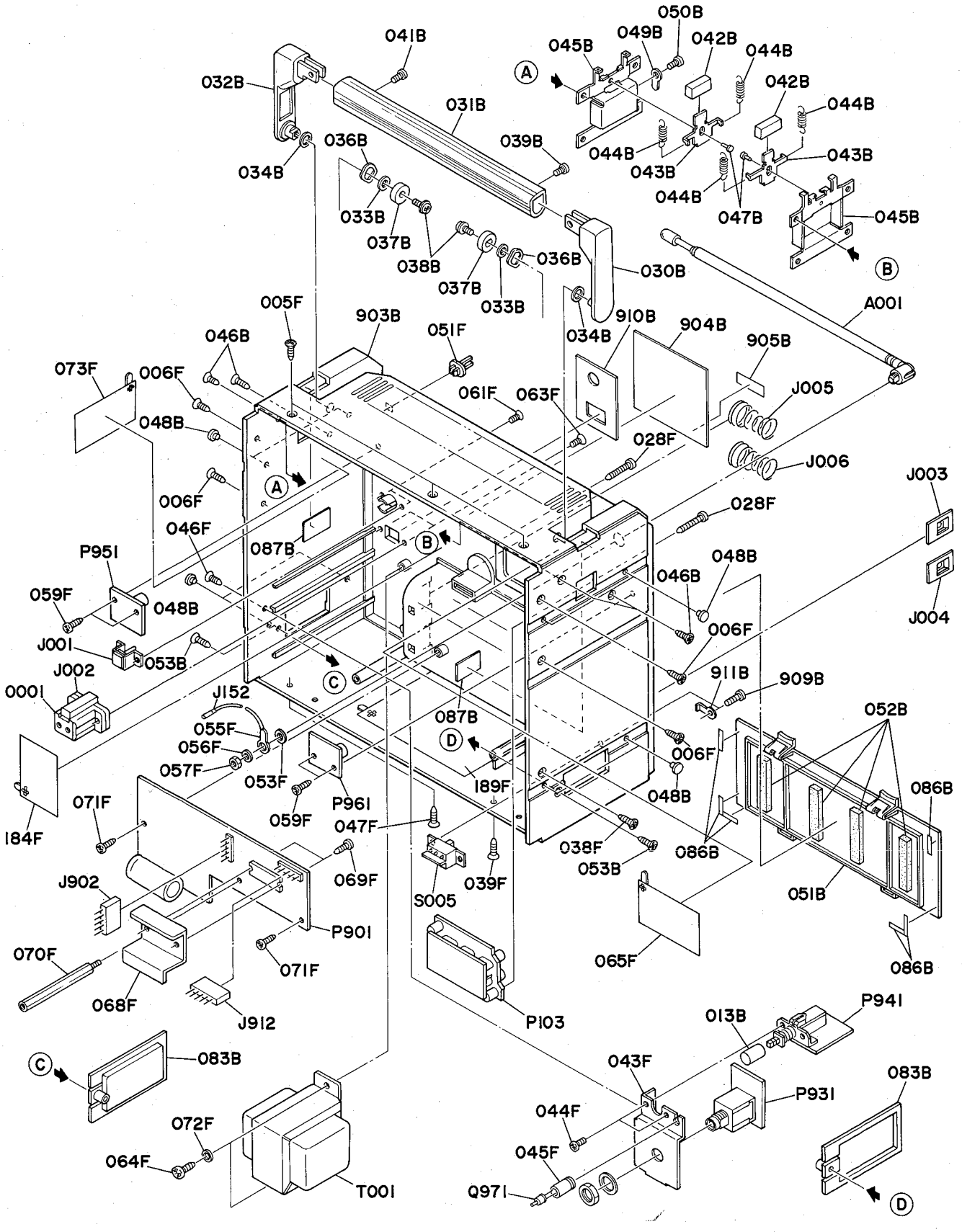
12.3 [P03-99] Associated Mechanism for Cassette Tape Operation



REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
018B	1	4276158010	Window, Cassette Door
019B	2	4276112010	Shaft
020B	1	4276063030	Escutcheon
022B	2	59046502G9	Washer
023B	1	4265053140	Cover
024B	2	51382606K0	P.H. Tapped Screw P2.6 x 6
025B	1	4276274010	Reflector
912B	1	215T056010	Buffer
076F	1	4265160520	Bracket, R (K)
082F	1	53110303A9	Hexagon Nut
083F	1	4197262010	Pulley
084F	1	4197112040	Shaft
085F	1	4197115030	Spring
086F	1	4265354010	Lever
087F	2	64000200R0	RG Ring, E Type
088F	1	4265115070	Spring
089F	1	4265258510	Hook (K), Door Lock
092F	2	64000200R0	RG Ring, E Type
093F	1	4265002520	Arm (K), Inter Lock
096F	1	64002500R0	RG Ring, E Type
097F	1	4265115040	Spring
098F	1	4265115030	Spring
101F	1	4265002550	Arm (K), Door R
104F	1	4265055010	Collar
105F	1	64000200R0	RG Ring, E Type
106F	1	64020200Q0	RG Ring, CS Type
107F	1	64000200R0	RG Ring, E Type
109F	1	4197258030	Hook
110F	1	72081604A0	String (20)
111F	1	56382540G0	Eyelet
112F	1	4197115020	Spring
113F	1	62031650W0	Lug
114F	1	51280306B0	B.H. Tapped Screw B3 x 6
116F	1	51100308B9	B.H.M. Screw B3 x 8

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
118F	1	51060306A9	P.H.M. Screw P3 x 6
120F	1	207T002010	Arm (L)
121F	1	64000200R0	RG Ring, E Type
126F	1	4265271010	Holder (R)
127F	1	4265271020	Holder (L)
128F	1	4265160110	Bracket
129F	4	5104260550	F.H.M. Screw F2.6 x 5
130F	1	4276053010	Cover
131F	2	51380206T0	P.H. Tapped Screw P2 x 6
132F	2	4265115050	Spring
133F	2	51062605S0	P.H.M. Screw P2.6 x 5
137F	1	207T160520	Bracket (K), Rec
140F	1	207T354040	Lever, Rec
141F	1	207T354050	Lever, Rec
142F	1	207T115050	Spring
143F	1	207T115060	Spring
144F	2	64002500R0	RG Ring, E Type
145F	2	51100305A9	B.H.M. Screw B3 x 5
146F	2	59035402G9	Washer
147F	1	207T160090	Bracket
148F	1	51100305A9	B.H.M. Screw B3 x 5
149F	2	51280312B0	B.H. Tapped Screw B3 x 12
150F	2	51280306B0	B.H. Tapped Screw B3 x 6
156F	2	51280310B0	B.H. Tapped Screw B3 x 10
158F	1	207T052010	Counter
160F	1	207T264010	Belt
181F	1	4265118010	Spacer
183F	1	62031650W0	Lug
192F	2	59030810P1	Washer
193F	1	4220005030	Clamper
J602	1	YJ06001060	Jack (7P)
S211	1	SB11900010	Switch Band, FLX

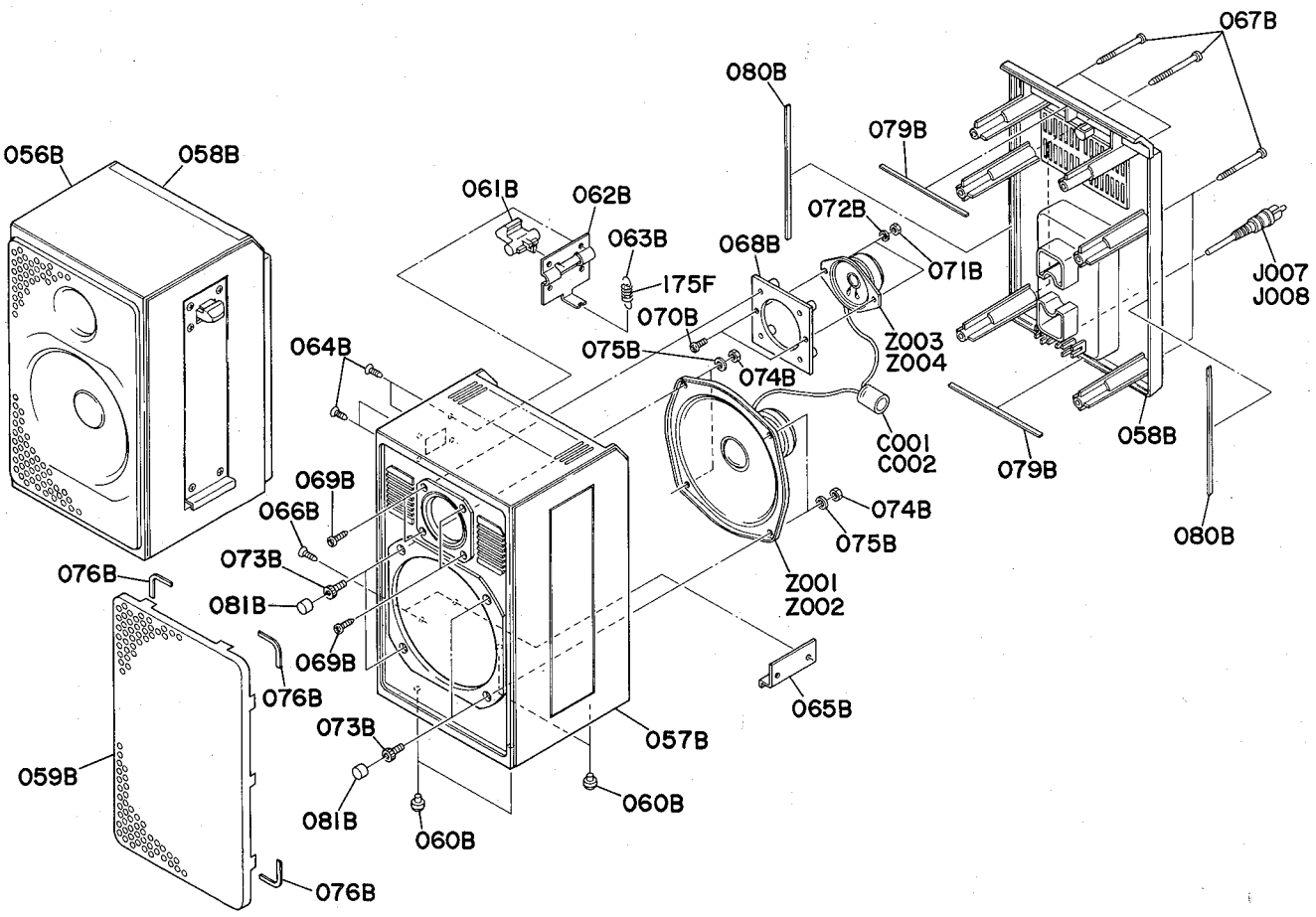
12.4 [P04-99] Rear Case and Battery Case



REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION	
B	1	205T257400	Lid Assembly, Rear Case	
030B	1	4282104010	Retainer	
031B	1	207T253010	Handle	
032B	1	4282104010	Retainer	
033B	2	59071105G9	Washer	
034B	2	59071102G9	Washer	
036B	2	54130800Q0	Wave Washer	
037B	2	207T118010	Spacer	
038B	2	51480308A9	F. Washer Screw	3 x 8
039B	1	51100306S9	B.H.M. Screw	B3 x 6
041B	1	51100306S9	B.H.M. Screw	B3 x 6
042B	2	4282154010	Knob	
043B	2	207T354030	Lever	
044B	4	207T115040	Spring	
045B	2	207T160120	Bracket	
046B	4	51870306U0	Screw	3 x 6
087B	2	4282107070	Sheet	
903B	1	207T257080	Lid, Rear Case	
904B	1	215T265010	Indicator	
C	1	207T257410	Lid Assembly, Battery	
051B	1	207T257020	Lid	
052B	4	2276118010	Spacer	
086B	6	4123107070	Sheet	
013B	1	3448154130	Knob, Power Switch	
047B	2	207T112050	Shaft	
048B	8	207T056010	Buffer	
049B	1	62261240W0	Lug	
050B	1	51382604T0	P.H. Tapped Screw	P2.6 x 4
053B	2	51870308U0	Screw	3 x 8
083B	2	207T257050	Lid, Cover	
905B	1	4581861010	Label	
909B	1	51100314S9	B.H.M. Screw	B3 x 14
911B	1	203T114010	Stopper	
005F	3	51870310U0	Screw	3 x 10
006F	4	51870308U0	Screw	3 x 8
028F	2	51280312U0	B.H. Tapped Screw	B3 x 12
038F	1	51870308U0	Screw	3 x 8
039F	1	51870310U0	Screw	3 x 10
043F	1	207T160190	Bracket	
044F	2	51100305A9	B.H.M. Screw	B3 x 5
045F	1	4279271010	Holder	
046F	1	51870308U0	Screw	3 x 8
047F	1	51870310U0	Screw	3 x 10
051F	1	217T271010	Holder, Antenna	
053F	1	217T104010	Retainer	
055F	1	62051870W0	Lug	
056F	1	54040502N0	Spring Washer	
057F	1	53110503E9	Hexagon Nut	
059F	4	51280306B0	B.H. Tapped Screw	B3 x 6
061F	2	51040205S0	F.H.M. Screw	F2 x 5
063F	2	51042612S0	F.H.M. Screw	F2.6 x 12
064F	2	51280308B0	B.H. Tapped Screw	B3 x 8
065F	1	207T109500	Shield (K)	

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION	
068F	1	207T267010	Heatsink	
069F	2	51280310B0	B.H. Tapped Screw	B3 x 10
070F	1	207T101020	Support	
071F	2	51280308B0	B.H. Tapped Screw	B3 x 8
072F	2	54020301A0	Flat Washer, P.	
073F	1	207T109500	Shield (K)	
184F	1	207T109500	Shield (K)	
189F	1	4299109500	Shield (K)	
0001	1	3370053010	Cover, AC Inlet	
A001	1	YR06080050	Whip Antenna	
J001	1	YJ04000470	Jack, EXT DC	
⚠ J002	1	YJ04000550	Jack, AC Inlet	
J003	1	YL12010710	Terminal (+)	
J004	1	YL12010710	Terminal (+)	
J005	1	YL11010090	Terminal (—)	
J006	1	YL11010090	Terminal (—)	
J152	1	YB00200610	Connective Cord	
J902	1	YJ06001050	Jack (5P)	
J912	1	YJ06001250	Jack (5P)	
⚠ T001	1	TS15406310	Power Transformer	
Q971	1	HI10009300	L.E.D. AR2132D, Power	
⚠ S005	1	SS02020510	Slide Switch, Vortage Selector	

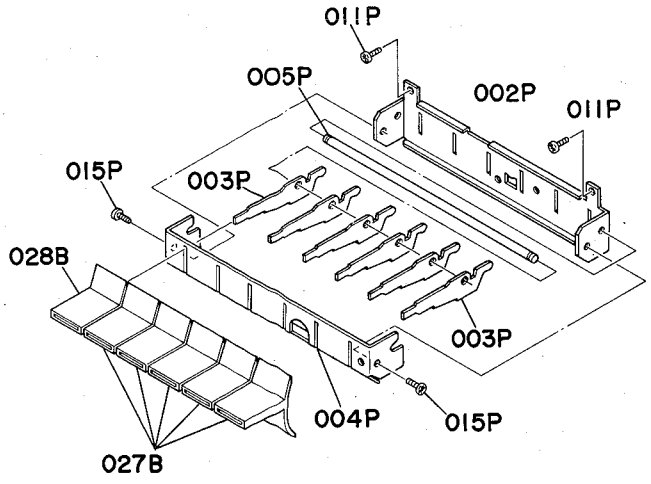
12.5 [P04-99] Speaker Box



REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION	
D	1	207T064420	Case Assembly, Speaker (L)	
056B	1	207T064030	Case (L)	
059B	1	207T202010	Net	
060B	4	3441057010	Leg	
061B	1	207T258010	Hook	
062B	1	207T160130	Bracket	
063B	1	207T115030	Spring	
064B	4	51870308U0	Screw	3 x 8
065B	1	207T104020	Retainer	
066B	2	51870308U0	Screw	3 x 8
068B	1	207T271030	Holder	
069B	4	51280316U0	B.H. Tapped Screw	B3 x 16
070B	2	51040308A9	F.H.M. Screw	F3 x 8
071B	2	53110303A9	Hexagon Nut	
072B	2	54040302N0	Spring Washer	
073B	4	51100415A9	B.H.M. Screw	B4 x 15
074B	4	53110401A9	Hexagon Nut	
075B	4	54020401A0	Flat Washer, P.	
076B	4	207T107010	Sheet	
081B	4	4282118020	Spacer	
D1	1	207T064430	Case Assembly, Speaker (R)	
057P	1	207T064040	Case (R)	
059B	1	207T202010	Net	
060B	4	3441057010	Leg	
061B	1	207T258010	Hook	
062B	1	207T160130	Bracket	
063B	1	207T115030	Spring	
064B	4	51870308U0	Screw	3 x 8
065B	1	207T104020	Retainer	

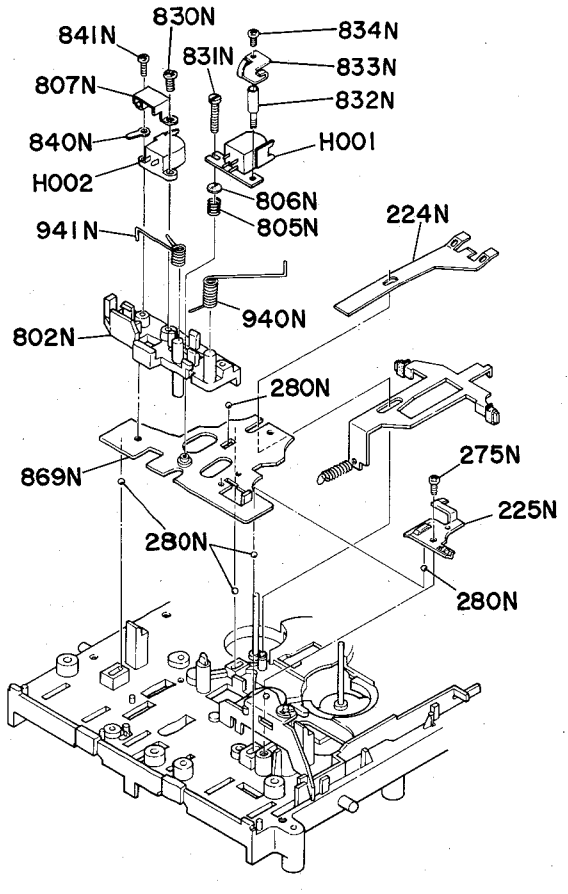
REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION	
066B	2	51870308U0	Screw	3 x 8
068B	1	207T271030	Holder	
069B	4	51280316U0	B.H. Tapped Screw	B3 x 16
070B	2	51040308A9	F.H.M. Screw	F3 x 8
071B	2	53110303A9	Hexagon Nut	
072B	2	54040302N0	Spring Washer	
073B	4	51100415A9	B.H.M. Screw	B4 x 15
074B	4	53110401A9	Hexagon Nut	
075B	4	54020401A0	Flat Washer, P.	
076B	4	207T107010	Sheet	
081B	4	4282118020	Spacer	
058B	2	207T257030	Lid	
067B	12	51280340U0	B.H. Tapped Screw	B3 x 40
079B	4	207T107020	Sheet	
080B	4	207T107030	Sheet	
175F	2	207T056040	Buffer	
C001	1	EQ47502520	Elect Cap. 4.7μF	25V (L)
C002	1	EQ47502520	Elect Cap. 4.7μF	25V (R)
J007	1	YB01500100	Connective Cord (L)	
J008	1	YB01500100	Connective Cord (R)	
Z001	1	QK01206020	Speaker (L), Woofer	
Z002	1	QK01206020	Speaker (R), Woofer	
Z003	1	QK00406010	Speaker (L), Tweeter	
Z004	1	QK00406010	Speaker (R), Tweeter	

12.6 [P05-99] Buttons for Tape Mechanism Operation



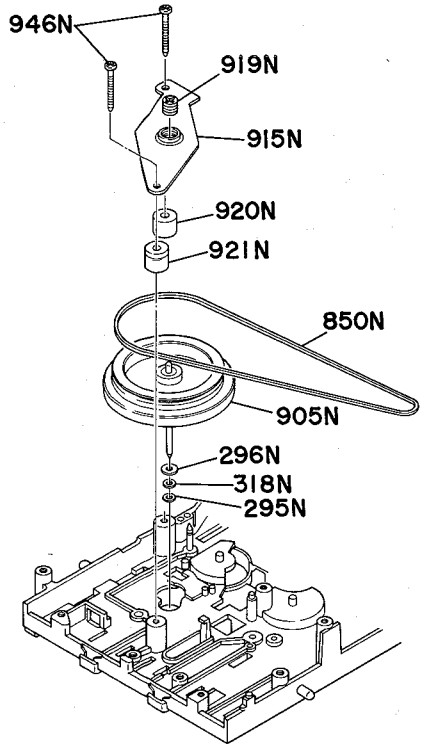
REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION	
027B	5	4276270030	Button	
028B	1	4276270040	Button, Rec	
002P	1	4380160010	Bracket	
003P	6	4380354070	Lever	
004P	1	4380051010	Guide	
005P	1	4380112030	Shaft	
011P	2	51300310B0	P.H. Tapped Screw	P3 x 10
015P	2	51062603A0	P.H.M. Screw	P2.6 x 3

12.7 [P06-99] Head Chassis



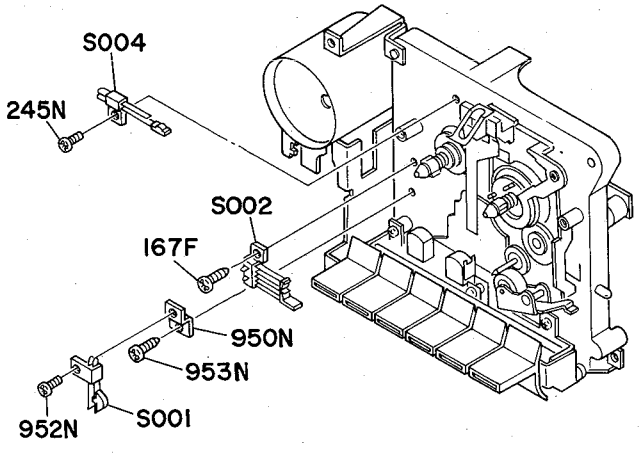
REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION	
224N	1	4380115130	Spring	
225N	1	4380115160	Spring	
275N	1	51300308B0	P.H. Tapped Screw	P3 x 8
280N	5	61020010T0	Ball	
802N	1	4367160010	Bracket	
805N	1	4383115030	Spring	
806N	1	3444118070	Spacer	
807N	1	4380053010	Cover	
830N	1	51100212A0	B.H.M. Screw	B2 x 12
831N	1	51190210A2	Screw	2 x 10
832N	1	4380101030	Support	
833N	1	4380005010	Clamper	
834N	1	51100204A0	B.H.M Screw	B2 x 4
840N	1	62021030W0	Lug	
841N	1	51100212A0	B.H.M. Screw	B2 x 12
869N	1	4380105720	Chassis Assembly	
940N	1	4367115380	Spring	
941N	1	4367115050	Spring	
H001	1	LH42851090	Rec/Play Head	
H002	1	LH31000540	Erase Head	

12.8 [P07-99] Flywheel



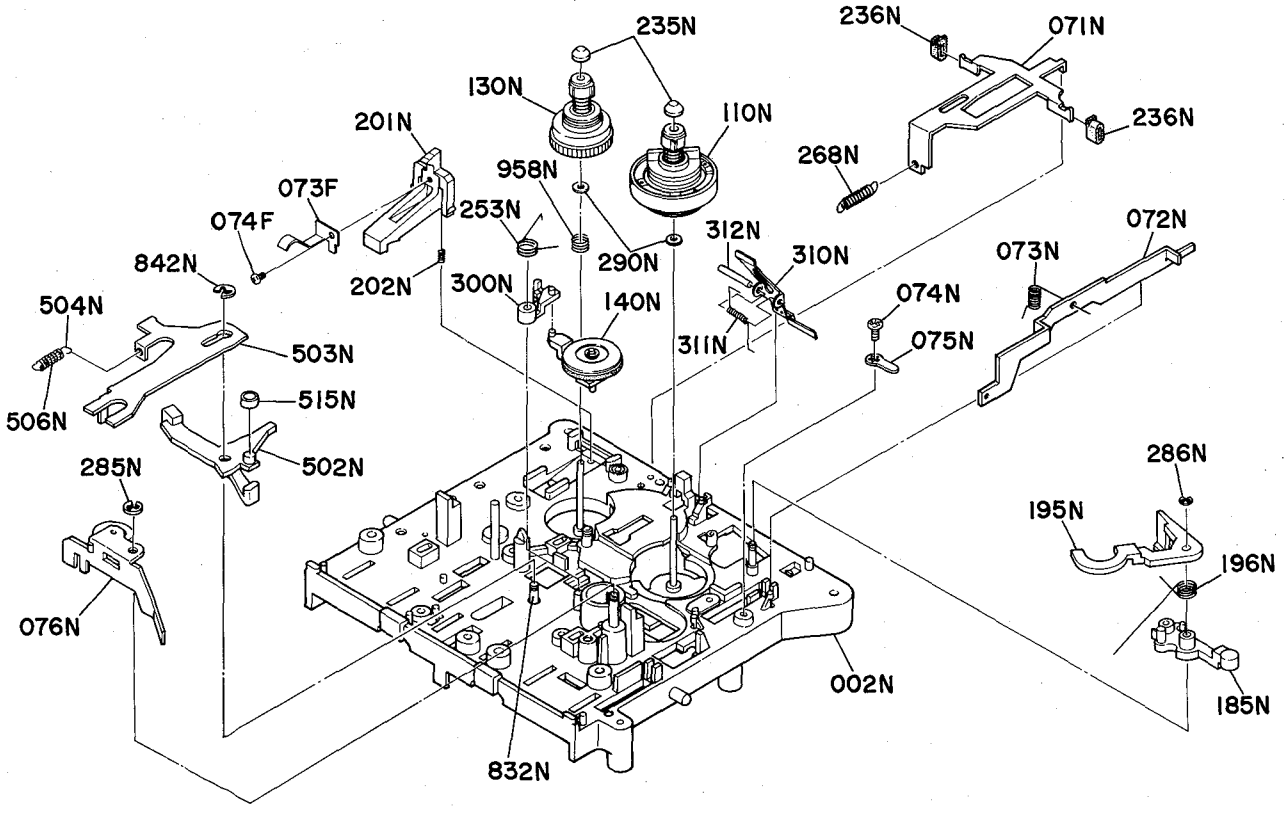
REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
295N	1	59264702G9	Washer
296N	1	59260702G9	Washer
318N	1	59264705G9	Washer
850N	1	4382264010	Belt
905N	1	4367273510	Flywheel
915N	1	4367104400	Retainer Assembly, Flywheel
919N	1	3483164020	Adjuster
920N	1	308Y101010	Support
921N	1	308Y101020	Support
946N	2	51280320U0	B.H. Tapped Screw B3 x 20

12.9 [P08-99] Switch Location for Tape Mechanism Operation



REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
167F	1	51302608B0	P.H. Tapped Screw P2.6 x 8
245N	1	51302608B0	P.H. Tapped Screw P2.6 x 8
950N	1	4411160020	Bracket
952N	2	51062608A0	P.H.M. Screw P2.6 x 8
953N	1	51300306B0	P.H. Tapped Screw P3 x 6
S001	1	SM01010510	Mini Switch, Play Start
S002	1	SM02020080	Mini Switch, FF/REW
S004	1	SM01010680	Mini Switch, Motor

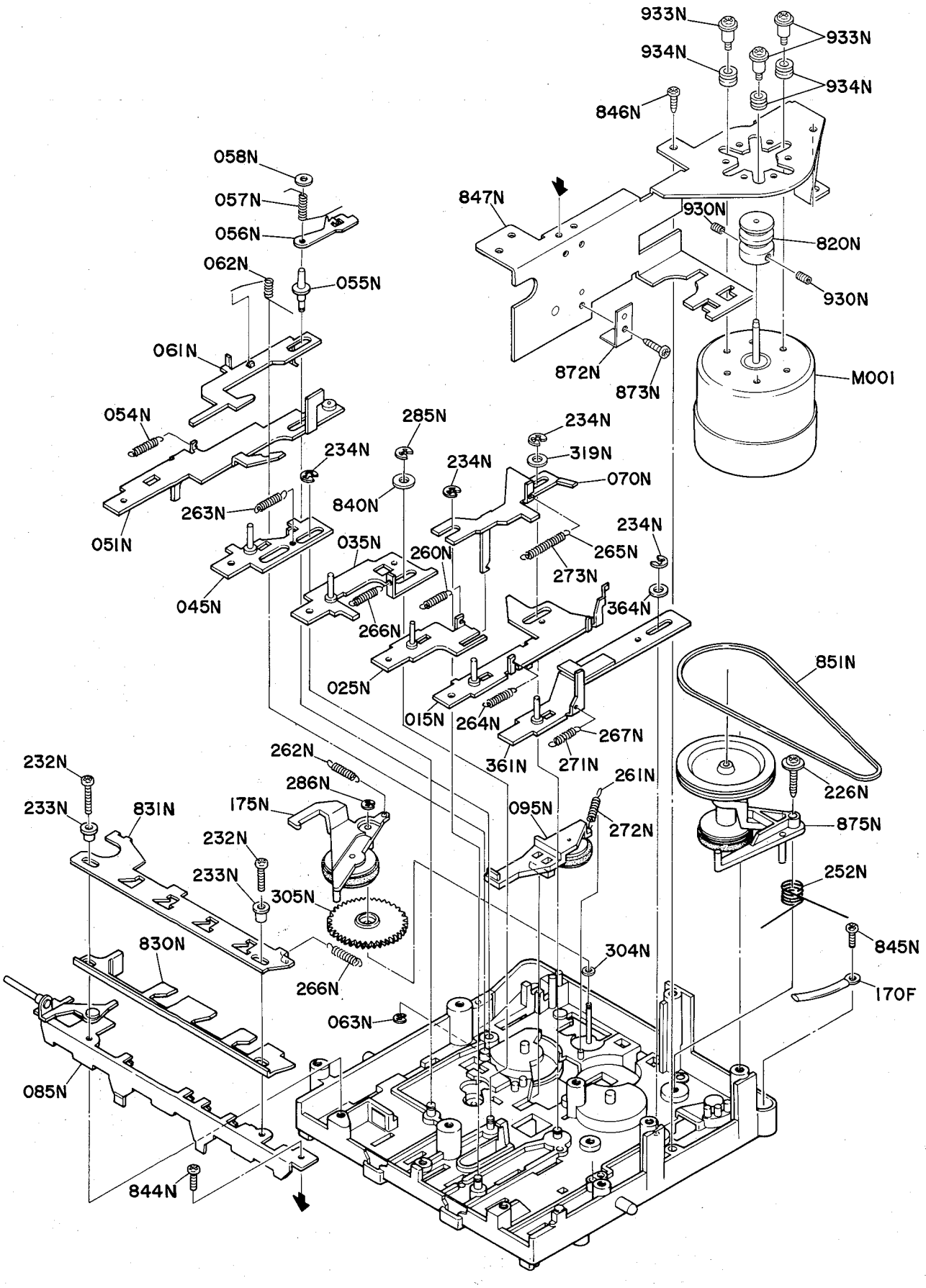
12.10 [P09-99] Parts Assembled on the Top Chassis



REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
002N	1	4380105400	Chassis Assembly
076N	1	4367002400	Arm Assembly, Pinch Roller
110N	1	4367004400	Table Assembly, Takeup
130N	1	4367004410	Table Assembly, Supply
140N	1	4367002410	Arm Assembly, Takeup
185N	1	4380354460	Lever Assembly, TMS
071N	1	4367354090	Lever
072N	1	4367354120	Lever
073N	1	4380115120	Spring
074N	1	51282608B0	B.H. Tapped Screw B2.6 x 8
075N	1	62261240W0	Lug
195N	1	4367002050	Arm
196N	1	4367115130	Spring
201N	1	4367354080	Lever
202N	1	4380115060	Spring
235N	2	4367067010	Cap
236N	2	4367263010	Brake
253N	1	4367115310	Spring
268N	1	4367115210	Spring
285N	1	64002500R0	RG Ring, E Type
286N	1	64001500R0	RG Ring, E Type

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
290N	2	59020402G9	Washer
300N	1	4367354110	Lever
310N	1	4380115140	Spring
311N	1	4380115170	Spring
312N	1	4380112010	Shaft
502N	1	4367002090	Arm
503N	1	4398354010	Lever
504N	1	4398115010	Spring
506N	1	4367056050	Buffer
515N	1	4367055050	Collar
832N	1	4367112190	Shaft
842N	1	64002500R0	RG Ring, E Type
958N	1	4367115300	Spring
073F	1	4197115060	Spring
074F	1	51302606U0	P.H. Tapped Screw P2.6 x 6

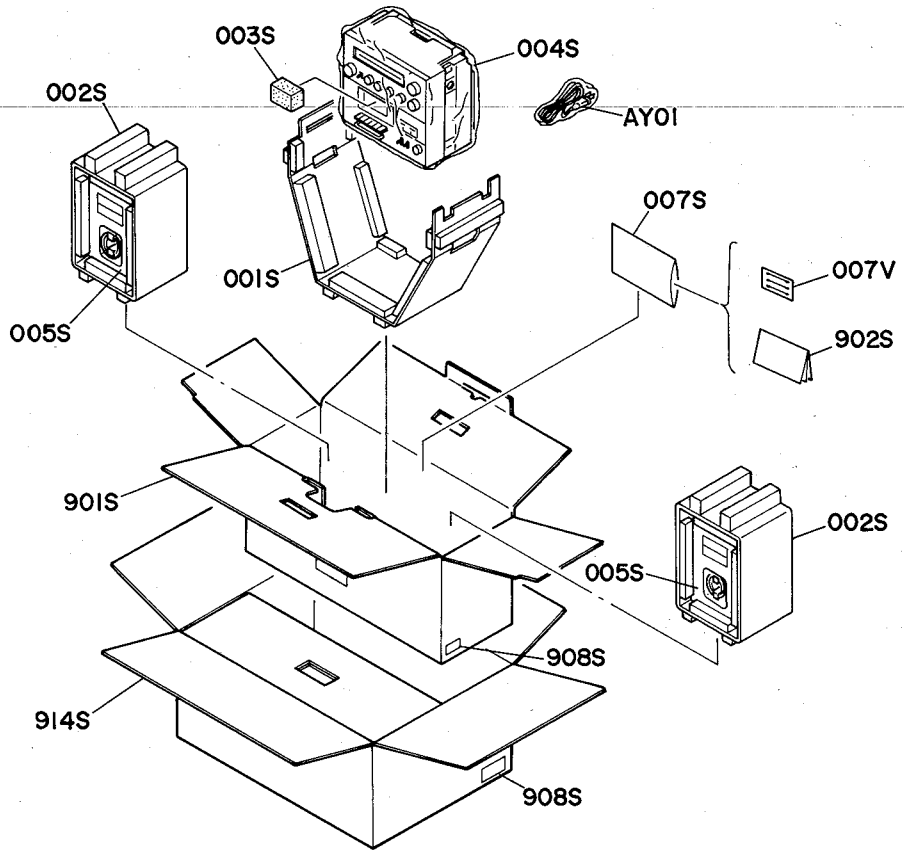
12.11 [P10-99] Parts Assembled on the Reverse Chassis



REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
015N	1	4380354400	Lever Assembly, Rew
025N	1	4380354410	Lever Assembly, Play
035N	1	4380354420	Lever Assembly, F.F.
045N	1	4380354430	Lever Assembly, Stop
051N	1	4380354440	Lever Assembly, Pause
085N	1	4380351400	Guide Assembly, Push Lever
095N	1	4367354450	Lever Assembly, F.F.
175N	1	4367002420	Arm Assembly, Tms Idler
361N	1	308Y354400	Lever Assembly, Rec
875N	1	4380001400	Idler Assembly
054N	1	4367115210	Spring
055N	1	4367112130	Shaft
056N	1	4367054030	Cam, Pause Lock
057N	1	4367115140	Spring
058N	1	59020805G9	Washer
061N	1	4367354070	Lever, Eject
062N	1	4380115080	Spring
063N	1	64001500R0	RG Ring, E Type

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
070N	1	4367354160	Lever, Head Chassis
226N	1	4367112180	Shaft
232N	1	51300312B0	P.H. Tapped Screw P3 x 12
233N	2	4380055010	Collar, Lock CAm
234N	4	64000300R0	RG Ring, E Type
252N	1	4380115050	Spring
260N	1	4367115240	Spring
261N	1	4367115090	Spring
262N	1	4367115120	Spring
263N	1	4367115250	Spring
264N	1	4367115340	Spring
265N	1	4367115270	Spring
266N	2	4367115280	Spring
267N	1	4380115070	Spring
271N	1	4367056020	Buffer
272N	1	4367056030	Buffer
273N	1	4367056020	Buffer
285N	1	64002500R0	RG Ring, E Type
286N	1	64001500R0	RG Ring, E Type
304N	1	4367118060	Spacer
305N	1	4367058500	Gear, (K)
319N	1	59046501G9	Washer
364N	1	54020401E0	Flat Washer, P.
820N	1	308Y262020	Pulley
830N	1	4367054010	Cam, Stop/Eject
831N	1	4367054020	Cam, Lock
840N	1	54110159A0	Washer
844N	1	51100306B9	B.H.M. Screw B3 x 6
845N	1	51100308B9	B.H.M. Screw B3 x 6
846N	1	51300308B0	P.H. Tapped Screw P3 x 8
847N	1	308Y160500	Bracket (K)
851N	1	4382264020	Belt, TMS
872N	1	308Y114010	Stopper
873N	1	51102603A0	B.H.M. Screw B2.6 x 3
930N	2	51690305Q9	Socket Screw, HP.
933N	3	4367112150	Shaft
934N	3	4383259010	Bushing
170F	1	4220005020	Clamper
M001	1	MM10900080	D.C. Motor, 2400rpm

12.12 [H01-99] Packing Materials



REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
001S	1	207T809010	Cushion
002S	2	207T809020	Cushion
003S	1	207T809030	Cushion
004S	1	9090909040	Polyethylene Sheet
005S	2	9012340200	Polyethylene Bag
007S	1	9013025010	Polyethylene Bag
901S	1	215T801010	Packing Case
902S	1	215T851310	Instructions
908S	4	9526019060	Serial No. Card
914S	1	215T805010	Master Carton

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
⚠AY01	1	ZC01805010	A.C. Power Cord
007V	1	4136071010	Cleaner

12.13 Electrical Parts

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
			P201-TUNER CIRCUIT BOARD
P101	1	YK215T1310	P.W. Board, Tuner
		ZZ215T8310	P.W. Board Assembly
			P201-CAPACITORS
CA01	1	CT10800030	Trimming 8pF SW, Ant.
CA02	1	DD10050300	Ceramic 5pF ±0.25pF
CA03	1	CT10800030	Trimming 8pF LW, Ant.
CA04	1	DD10030370	Ceramic 3pF ±0.25pF
CA05	1	DD15180300	Ceramic 18pF ±5%
CA06	1	DK18223320	Ceramic 0.022μF +80% –20%
CA07	1	DK18473320	Ceramic 0.047μF +80% –20%
CA08	1	EA47505030	Elect 4.7μF 50V
CA09	1	DK18473320	Ceramic 0.047μF +80% –20%
CA10	1	DK18223320	Ceramic 0.022μF +80% –20%
CA11	1	DK18223320	Ceramic 0.022μF +80% –20%
CA12	1	DK18223320	Ceramic 0.022μF +80% –20%
CA13	1	DF55332090	Film 3300pF ±5%
CA15	1	CT11450010	Trimming 1.4μF SW, OSC
CA16	1	DD10050300	Ceramic 5pF ±0.25pF
CA17	1	DD11100300	Ceramic 10pF ±0.5pF
CA18	1	DF55331090	Film 330pF ±5%
CA20	1	DD15200300	Ceramic 20pF ±5%
CA21	1	CT11450010	Trimming 1.4μF LW, OSC
CA22	1	DF55181090	Film 180pF ±5%
CA23	1	DD15560300	Ceramic 56pF ±5%
CA25	1	DK16102300	Ceramic 1000pF ±10%
CA26	1	DK18223320	Ceramic 0.022μF +80% –20%
CA27	1	DK18223320	Ceramic 0.022μF +80% –20%
CA28	1	DK18473320	Ceramic 0.047μF +80% –20%
CA29	1	DD15470370	Ceramic 47pF ±5%
CA30	1	EA47505030	Elect 4.7μF 50V
CF01	1	DK16102300	Ceramic 1000pF ±10%
CF02	1	DK16102300	Ceramic 1000pF ±10%
CF04	1	DK18473320	Ceramic 0.047μF +80% –20%
CF05	1	DD11100300	Ceramic 10pF ±0.5%pF
CF06	1	DD10050300	Ceramic 5pF ±0.25pF
CF07	1	DD15330370	Ceramic 33pF ±5%
CF08	1	DD10050300	Ceramic 5pF ±0.25pF
CF09	1	DK18223320	Ceramic 0.022μF +80% –20%
CF10	1	DD11100300	Ceramic 10pF ±0.5pF
CF11	1	DD10050300	Ceramic 5pF ±0.25pF
CF12	1	DD15150300	Ceramic 15pF ±5%
CF13	1	DD15470300	Ceramic 47pF ±5%
CF14	1	DD15360300	Ceramic 36pF ±5%
CF15	1	DK18103300	Ceramic 0.01μF
CF16	1	DK18473320	Ceramic 0.047μF +80% –20%
CF17	1	DK18223320	Ceramic 0.022μF +80% –20%
CF18	1	DK18103300	Ceramic 0.01μF
CF19	1	DK18473320	Ceramic 0.047μF +80% –20%
CF21	1	DK18103300	Ceramic 0.01μF
CF22	1	DK18473320	Ceramic 0.047μF +80% –20%
CF23	1	EA47505030	Elect 4.7μF 50V
CF24	1	DK16102300	Ceramic 1000pF ±10%
CF25	1	DK16821300	Ceramic 820pF ±10%
CF26	1	DK18223300	Ceramic 0.022μF +80% –20%
CF27	1	DK18473320	Ceramic 0.047μF +80% –20%
CF28	1	DK18223320	Ceramic 0.022μF +80% –20%

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
CX01	1	DD15101370	Ceramic 1000pF ±5%
CX02	1	EA10601630	Elect 10μF 16V
CX03	1	EA47405030	Elect 0.47μF 50V
CX04	1	EA22405030	Elect 0.22μF 50V
CX05	1	DF55102090	Film 1000pF ±5%
CX06	1	EA10505030	Elect 1μF 50V
CX07	1	DF16183300	Film 0.018μF ±10%
CX08	1	DF16183300	Film 0.018μF ±10%
CX09	1	EA47505030	Elect 4.7μF 50V
CX10	1	EA47505030	Elect 4.7μF 50V
CX11	1	DF16272300	Film 2700pF ±10%
CX12	1	DF16272300	Film 2700pF ±10%
CX13	1	EA10701030	Elect 100μF 10V
C101	1	DD17470010	Ceramic 47pF ±20%
C102	1	DD11100370	Ceramic 10pF ±0.5pF
C104	1	DK18473320	Ceramic 0.047μF +80% –20%
C105	1	DF17103300	Film 0.01μF ±20%
C106	1	DK18103300	Ceramic 0.01μF
C107	1	DK18223320	Ceramic 0.022μF +80% –20%
C108	1	EA10701030	Elect 100μF 10V
C109	1	DK16102300	Ceramic 1000pF ±10%
C110	1	EA22405030	Elect 0.22μF 50V
C111	1	DF16562300	Film 5600pF ±10%
C112	1	EA33601030	Elect 33μF 10V
C113	1	DK18223300	Ceramic 0.022μF +80% –20%
C114	1	EA47601030	Elect 4.7μF 10V
C115	1	EA47505030	Elect 47μF 50V
C116	1	DF16223300	Film 0.022μF ±10%
C201	1	EA47601030	Elect 47μF 10V
C202	1	EA47601030	Elect 47μF 10V
C203	1	DD15471370	Ceramic 470pF ±5%
C205	1	DK16681300	Ceramic 680pF ±10%
C206	1	DK16681300	Ceramic 680pF ±10%
C207	1	DF16102300	Film 1000pF ±10%
C208	1	DF16102300	Film 1000pF ±10%
C209	1	EA47505030	Elect 4.7μF 50V
C210	1	EA47505030	Elect 4.7μF 50V
C211	1	DF16103300	Film 0.01μF ±10%
C212	1	DF16103300	Film 0.01μF ±10%
C213	1	EA10505030	Elect 1μF 50V
C214	1	EA10505030	Elect 1μF 50V
C215	1	EA47505030	Elect 4.7μF 50V
C216	1	EA47505030	Elect 4.7μF 50V
C219	1	DK16102300	Ceramic 1000pF ±10%
C220	1	DK16102300	Ceramic 1000pF ±10%
C221	1	EA47505030	Elect 4.7μF 50V
C222	1	EA47505030	Elect 4.7μF 50V
C225	1	EA10505030	Elect 1μF 50V
C226	1	EA10505030	Elect 1μF 50V
C227	1	DK16471300	Ceramic 470pF ±10%
C228	1	DK16471300	Ceramic 470pF ±10%
C229	1	EA47505030	Elect 4.7μF 50V
C230	1	EA47505030	Elect 4.7μF 50V
C231	1	DD15101370	Ceramic 100pF ±5%
C232	1	DD15101370	Ceramic 100pF ±5%
C233	1	DF16103300	Film 0.01μF ±10%
C234	1	DF16103300	Film 0.01μF ±10%
C235	1	DF16103300	Film 0.01μF ±10%

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
C236	1	DF16103300	Film 0.01μF ±10%
C237	1	DF16222300	Film 2200pF ±10%
C238	1	DF16222300	Film 2200pF ±10%
C239	1	EA47505030	Elect 4.7μF 50V
C240	1	EA47505030	Elect 4.7μF 50V
C241	1	DD15331370	Ceramic 330pF ±5%
C242	1	DD15331370	Ceramic 330pF ±5%
C243	1	EA47505030	Elect 4.7μF 50V
C244	1	EA47505030	Elect 4.7μF 50V
C245	1	DF16102300	Film 1000pF ±10%
C246	1	DF16102300	Film 1000pF ±10%
C247	1	DF16563300	Film 0.056μF ±10%
C248	1	DF16563300	Film 0.056μF ±10%
C249	1	DF75222510	Film 2200pF ±5%
C250	1	DF75102510	Film 1000pF ±5%
C251	1	DF16103300	Film 0.01μF ±10%
C252	1	DF16103300	Film 0.01μF ±10%
C253	1	DK18103300	Ceramic 0.01μF
C254	1	EA22405030	Elect 0.22μF 50V
C255	1	DK16471300	Ceramic 470pF ±10%
C256	1	DK16471300	Ceramic 470pF ±10%
			P201-RESISTORS
			(All resistors are ±5% and ¼W)
RA01	1	GD05153140	15KΩ
RA02	1	GD05222140	2.2KΩ
RA03	1	GD05561140	560Ω
RA04	1	GD05330140	33Ω
RA05	1	GD05332140	3.3KΩ
RA06	1	GD05470140	47Ω
RA07	1	GD05392140	3.9KΩ
RA08	1	GD05102140	1KΩ
RA09	1	GD05333140	33KΩ
RA10	1	GD05220140	22Ω
RA11	1	GD05681140	680Ω
RA12	1	GD05561140	560Ω
RA13	1	GD05472140	4.7KΩ
RA14	1	GD05561140	560Ω
RA15	1	GD05122140	1.2KΩ
RA16	1	GD05101140	100Ω
RA17	1	GD05104140	100KΩ
RA18	1	GD05471140	470Ω
RA19	1	GD05103140	10KΩ
RA20	1	GD05102140	1KΩ
RF01	1	GD05561140	560Ω
RF02	1	GD05102140	1KΩ
RF03	1	GD05683140	68KΩ
RF04	1	GD05100140	100Ω
RF05	1	GD05222140	2.2KΩ
RF06	1	GD05474140	470KΩ
RF07	1	GD05102140	1KΩ
RF08	1	GD05103140	10KΩ
RF09	1	GD05222140	2.2KΩ
RF10	1	GD05101140	100Ω
RF11	1	GD05103140	10KΩ
RF12	1	GD05474140	470KΩ
RF13	1	GD05471140	470Ω
RF14	1	GD05331140	330Ω
RF15	1	GD05224140	220KΩ

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
RF16	1	GD05103140	10KΩ
RF17	1	GD05101140	100Ω
RF18	1	GD05224140	220KΩ
RF19	1	GD05101140	100Ω
RF20	1	GD05103140	10KΩ
RF21	1	GD05332140	3.3KΩ
RF22	1	GD05105140	1MΩ
RF23	1	GD05222140	2.2KΩ
RF24	1	GD05471140	470Ω
RF25	1	GD05101140	100Ω
RF26	1	GD05391140	390Ω
RF27	1	GD05102140	1KΩ
RF28	1	GD05331140	330Ω
RF29	1	GD05331140	330Ω
RX01	1	GD05562140	5.6KΩ
RX02	1	GD05102140	1KΩ
RX03	1	RA01030260	10KΩ (B), Trimming
RX04	1	GD05822140	8.2KΩ
RX05	1	GD05104140	100KΩ
RX06	1	GD05334140	330KΩ
RX07	1	GD05561140	560Ω
RX09	1	GD05332140	3.3KΩ
RX10	1	GD05332140	3.3KΩ
RX11	1	GD05272140	2.7KΩ
RX12	1	GD05272140	2.7KΩ
RX13	1	GD05473140	47KΩ
RX14	1	GD05473140	47KΩ
RX15	1	GD05223140	22KΩ
RX16	1	GD05223140	22KΩ
RX17	1	GD05334140	330KΩ
R101	1	GD05103140	10KΩ
R102	1	GD05101140	100Ω
R103	1	GD05105140	1MΩ
R104	1	GD05101140	100Ω
R105	1	GD05332140	3.3KΩ
R106	1	GD05104140	100KΩ
R107	1	GD05331140	330Ω
R108	1	GD05472140	4.7KΩ
R109	1	GD05221140	220Ω
R201	1	GD05100140	10Ω
R202	1	GD05100140	10Ω
R205	1	GD05104140	100KΩ
R206	1	GD05104140	100KΩ
R207	1	GD05473140	47KΩ
R208	1	GD05473140	47KΩ
R209	1	GD05222140	2.2KΩ
R210	1	GD05222140	2.2KΩ
R211	1	RA01020110	1KΩ, Trimming
R213	1	GD05821140	820Ω
R214	1	GD05821140	820Ω
R215	1	GD05224140	220KΩ
R217	1	GD05332140	3.3KΩ
R218	1	GD05332140	3.3KΩ
R219	1	GD05333140	33KΩ
R220	1	GD05333140	33KΩ
R221	1	GD05102140	1KΩ
R222	1	GD05102140	1KΩ
R223	1	GD05153140	15KΩ
R224	1	GD05153140	15KΩ

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
R229	1	GD05473140	47KΩ
R230	1	GD05473140	47KΩ
R231	1	GD05103140	10KΩ
R232	1	GD05103140	10KΩ
R233	1	GD05104140	100KΩ
R234	1	GD05104140	100KΩ
R235	1	GD05102140	1KΩ
R236	1	GD05102140	1KΩ
R237	1	GD05562140	5.6KΩ
R238	1	GD05562140	5.6KΩ
R239	1	RM01040380	100KΩ(B) Variable, Treble
R240	1	RM01040380	100KΩ(B) Variable, Bass
R241	1	GD05123140	12KΩ
R242	1	GD05123140	12KΩ
R243	1	GD05123140	12KΩ
R244	1	GD05123140	12KΩ
R245	1	GD05334140	330KΩ
R246	1	GD05334140	330KΩ
R247	1	GD05153140	15KΩ
R248	1	GD05153140	15KΩ
R249	1	GD05273140	27KΩ
R250	1	GD05273140	27KΩ
R251	1	GD05104140	100KΩ
R252	1	GD05104140	100KΩ
R253	1	GD05334140	330KΩ
R254	1	GD05334140	330KΩ
R255	1	GD05183140	18KΩ
R256	1	GD05183140	18KΩ
R257	1	GD05392140	3.9KΩ
R258	1	GD05392140	3.9KΩ
R259	1	GD05221140	220Ω
R260	1	GD05221140	220Ω
R261	1	GD05472140	4.7KΩ
R262	1	GD05472140	4.7KΩ
R263	1	RK05030290	50KΩ(G) Variable, Balance
R264	1	RM05030820	50KΩ(B) Variable, Volume
R265	1	GD05332140	3.3KΩ
R266	1	GD05332140	3.3KΩ
R267	1	GD05105140	1MΩ
R268	1	GD05224140	220KΩ
R269	1	GD05225140	2.2MΩ
R270	1	GD05225140	2.2MΩ
R271	1	GD05332140	3.3KΩ
R272	1	GD05821140	820Ω
			P201-SEMICONDUCTORS
QA01	1	HT308291B0	Transistor 2SC829(B)
QA02	1	HT308291B0	Transistor 2SC829(B)
QA03	1	HT308291C0	Transistor 2SC829(C)
QA04	1	HT309452A0	Transistor 2SC945(Q or R)
QF01	1	HT310471C0	Transistor 2SC1047(C)
QF02	1	HT310471C0	Transistor 2SC1047(C)
QF03	1	HT313591C0	Transistor 2SC1359(C)
QF04	1	HT308291C0	Transistor 2SC829(C)
QF05	1	HT308291C0	Transistor 2SC829(C)
QF06	1	HD20001210	Diode 1S2473
QF07	1	HD10002020	Diode OA90
QF08	1	HD40009090	Varicap 1S2688B
QF09	1	HD10002020	Diode OA90
QF10	1	HD10002020	Diode OA90
QF11	1	HD20001210	Diode 1S2473

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
QX01	1	HC10051050	IC TA7323P
QX02	1	HD20001210	Diode 1S2473
QX03	1	HD20001210	Diode 1S2473
Q101	1	HC10036010	IC HA12413
Q102	1	HT309452A0	Transistor 2SC945(Q or R)
Q103	1	HD10002020	Diode OA90
Q104	1	HI10014020	L.E.D. LN217RP, MPX Ind.
Q105	1	HI10014020	L.E.D. LN217RP, Tuning Ind.
Q201	1	HC10019210	IC BA318
Q202	1	HC10019210	IC BA318
Q203	1	HT309452A0	Transistor 2SC945(Q or R)
Q204	1	HT309452A0	Transistor 2SC945(Q or R)
Q205	1	HT309452A0	Transistor 2SC945(Q or R)
Q206	1	HT309452A0	Transistor 2SC945(Q or R)
Q207	1	HT110151B0	Transistor 2SA1015(Y)
Q208	1	HT110151B0	Transistor 2SA1015(Y)
Q227	1	HD20001210	Diode 1S2473
Q228	1	HD20001210	Diode 1S2473
Q229	1	HD20001210	Diode 1S2473
			P201-MISCELLANEOUS
FA01	1	GF450302B0	Ceramic Filter, SFZ450B3L4
FA01	1	FF11070120	Ceramic Filter, SFE10.7MS3
FF02	1	FF11070120	Ceramic Filter, SFE10.7MS3
FF03	1	FF39800010	L.C. Filter
F101	1	FF11070110	Ceramic Filter, SFE10.7MJ
J151	1	YP10001090	Plug, Rod Ant.
J152	1	YB00200610	Connective Cord
J153	3	YL03010240	Terminal, EXT Ant.
J201	1	YP06000370	Plug, (7P)
J202	1	YP06000390	Plug, (9P)
J203	1	YJ10001610	Jack, Head Connect
LA01	1	LF11400990	Antenna Coil, MW-LW
LA02	1	LA10350020	Antenna Coil, SW
LA03	1	LO70033160	OSC Coil, SW
LA04	1	LO70033140	OSC Coil, MW
LA05	1	LO70033130	OSC Coil, LW
LA06	1	LC16820020	Choke Coil, 6.8μH
LA07	1	LI70033070	I.F.T. Coil, AM-1
LF02	1	LA70258020	Antenna Coil, FM RE
LF03	1	LC16820020	Choke Coil, 6.8μH
LF04	1	LA70258020	Antenna Coil, FM OSC
LF05	1	LI70038180	I.F.T. Coil, FM-1
LX01	1	LS70305010	M.P.X. Coil, Pilot Filter
LX02	1	LS70305010	M.P.X. Coil, Pilot Filter
L102	1	LI70033090	I.F.T. Coil, AM-2
L103	1	LI70038190	I.F.T. Coil, FM-2
L201	1	LC22260060	Choke Coil, 22μH
L203	1	LC22260010	Choke Coil, 22μH
L204	1	LC22260010	Choke Coil, 22μH
SA01	1	SS08030190	Slide Switch, AM Band
SA02	1	SC00030020	Switch
SA03	1	SB11000020	Switch Band, FLX
S201	1	SS09020140	Slide Switch, Rec/Play
S202	1	SR04050220	Rotary Switch, Function
S203	1	SC04030050	Switch, Iss/Mono-Stereo
S211	1	SB11900010	Switch BAnd, FLX

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
			P202-AUDIO CIRCUIT BOARD
P202	1	YK215T1320	P.W. Board, Audio
P202	1	ZZ215T8320	P.W. Board Assembly
			P202-CAPACITORS
C401	1	DF16223300	Film 0.022μF ±10%
C402	1	DF16223300	Film 0.022μF ±10%
C405	1	DF16183300	Film 0.018μF ±10%
C406	1	DF16183300	Film 0.018μF ±10%
C407	1	EA10505030	Elect 1μF 50V
C408	1	EA10505030	Elect 1μF 50V
C409	1	EA22505030	Elect 2.2μF 50V
C410	1	EA22505030	Elect 2.2μF 50V
C411	1	DF15223300	Film 0.022μF ±5%
C412	1	DF15223300	Film 0.022μF ±5%
C413	1	DF15152300	Film 1500pF ±5%
C414	1	DF15152300	Film 1500pF ±5%
C441	1	EA10701030	Elect 100μF 10V
C451	1	EA47505030	Elect 4.7μF 50V
C452	1	EA47505030	Elect 4.7μF 50V
C453	1	DF16153300	Film 0.015μF ±10%
C454	1	DF16153300	Film 0.015μF ±10%
C455	1	EA47505030	Elect 4.7μF 50V
C456	1	EA47505030	Elect 4.7μF 50V
C457	1	DF16224300	Film 0.22μF ±10%
C458	1	DF16224300	Film 0.22μF ±10%
C459	1	EA33701030	Elect 330μF 10V
			R202-RESISTORS (All Resistors are ±5% and ¼W)
R407	1	GD05222140	2.2KΩ
R408	1	GD05222140	2.2KΩ
R409	1	GD05472140	4.7KΩ
R410	1	GD05472140	4.7KΩ
R411	1	GD05104140	100KΩ
R412	1	GD05104140	100KΩ
R413	1	GD05562140	5.6KΩ
R414	1	GDo5562140	5.6KΩ
R415	1	GD05332140	3.3KΩ
R416	1	GD05332140	3.3KΩ
R417	1	GD05123140	12KΩ
R418	1	GD05123140	12KΩ
R419	1	GD05822140	8.2KΩ
R420	1	GD05822140	8.2KΩ
R421	1	GD05562140	5.6KΩ
R422	1	GD05562140	5.6KΩ
R431	1	GD05330140	33Ω
R432	1	GD05680140	68Ω
R433	1	GG05033120	3.3Ω ½W
R441	1	GD05273140	27KΩ
R442	1	GD05104140	100KΩ
R443	1	GD05222140	2.2KΩ
R451	1	GD05472140	4.7KΩ
R452	1	GD05472140	4.7KΩ
R453	1	RN05105140	1MΩ
R454	1	RN05105140	1MΩ
R455	1	GD05331140	330Ω
R456	1	GD05331140	330Ω
R457	1	GD05103140	10KΩ
R458	1	GD05103140	10KΩ

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
R459	1	GD05473140	47KΩ
R460	1	GD05473140	47KΩ
R461	1	GD05123140	12KΩ
R462	1	GD05123140	12KΩ
R463	1	GD05152140	1.5KΩ
R464	1	GD05152140	1.5KΩ
R465	1	GD05221140	220Ω
R467	1	GD05472140	4.7KΩ
R468	1	GD05472140	4.7KΩ
			P202-SEMICONDUCTORS
Q401	1	HD10003020	Diode 2OA90
Q402	1	HD10003020	Diode 2OA90
Q403	1	HD10003020	Diode 2OA90
Q404	1	HD10003020	Diode 2OA90
Q441	1	HT309452A0	Transistor 2SC945(Q or R)
Q442	1	HD20001210	Diode 1S2473
Q451	1	HT314002A0	Transistor 2SC1400
Q452	1	HT314002A0	Transistor 2SC1400
			P202-MISCELLANEOUS
J401	1	YP06001040	Plug, (3P)
J402	1	YJ06001040	Jack, (3P)
L401	1	LC24750500	Choke Coil, 4.7mH
L402	1	LC24750500	Choke Coil, 4.7mH
L403	1	LC26850500	Choke Coil, 6.8mH
L404	1	LC26850500	Choke Coil, 6.8mH
L481	1	LC22260060	Choke Coil, 22mH
S401	1	SS08030070	Slide Switch, Tape Selector
S411	1	SB11910030	Switch Band, FLX
S421	1	SC00030020	Switch
			P103-JACK CIRCUIT BOARD
P203	1	YK257T1330	P.W. Board, Jack
	1	ZZ215T8330	P.W. Board Assembly
			P103-RESISTORS
R471	1	GD05104140	100KΩ ±5% ¼W
R472	1	GD05104140	100KΩ ±5% ¼W
R473	1	GD05822140	8.2KΩ ±5% ¼W
R474	1	GD05822140	8.2KΩ ±5% ¼W
R475	1	GD05333140	33KΩ ±5% ¼W
R476	1	GD05333140	33KΩ ±5% ¼W
			P103-MISCELLAENOUS
J470	1	YT02060100	Terminal, RCA Pin Jack (6P)
W471	1	YU03080260	Jumper Lead (3P)
W472	1	YU03080260	Jumper Lead (3P)

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
			P301-TAPE EQ/MIC AMP.(L) CIRCUIT BOARD
P301	1	YH207T1410	P.W. Board, Tape EQ/MIC Amp. (L)
	1	ZZ207T8410	P.W. Board Assembly
			P301-CAPACITORS
C301	1	DD15561370	Ceramic 560pF ±5%
C303	1	EA47505030	Elect 4.7μF 50V
C307	1	EA33601630	Elect 33μF 16V
C309	1	EA47505030	Elect 4.7μF 50V
C311	1	DD15330370	Ceramic 33pF ±5%
C313	1	EA10505030	Elect 1μF 50V
C315	1	DK16102300	Ceramic 1000pF ±10%
			P301-RESISTORS (All Resistors are ±5% and ¼W)
R301	1	GD05563140	56KΩ
R303	1	GD05104140	100KΩ
R305	1	GD05103140	10KΩ
			P301-IC
Q301	1	HC10012210	IC BA314
			P301-PLUG
J301	1	YP06000370	Plug (7P)
			P302-TAPE EQ/MIC AMP. (R) CIRCUIT BOARD
P302	1	YG207T1420	P.W. Board, Tape QE/MIC Amp. (R)
	1	ZZ207T8420	P.W. Board Assembly
			P302-CAPACITORS
C302	1	DD15561370	Ceramic 560pF ±5%
C304	1	EA47505030	Elect 4.7μF 50V
C308	1	EA33601630	Elect 33μF 16V
C310	1	EA47505030	Elect 4.7μF 50V
C312	1	DD15330370	Ceramic 33pF ±5%
C314	1	EA10505030	Elect 1μF 50V
C316	1	DK16102300	Ceramic 1000pF ±10%
			P302-RESISTORS (All Resistors are ±5% and ¼W)
R302	1	GD05563140	56KΩ
R304	1	GD05104140	100KΩ
R306	1	GD05103140	10KΩ
			P302-IC
Q302	1	HC10012210	IC BA314
			P302-PLUG
J302	1	YP06000370	Plug (7P)
			P302-LINE AMP. CIRCUIT BOARD
P303	1	YH207T1430	P.W. Board, Line Amp.
	1	ZZ207T8430	P.W. Board Assembly
			P303-CAPACITORS
C321	1	EA10601630	Elect 10μF 16V
C322	1	EA10601630	Elect 10μF 16V
C323	1	DK16331300	Ceramic 330pF ±10%
C324	1	DK16331300	Ceramic 330pF ±10%
C325	1	EA10701030	Elect 100μF 10V
C326	1	EA10701030	Elect 100μF 10V
C327	1	EA47505030	Elect 4.7μF 50V
C328	1	EA47505030	Elect 4.7μF 50V

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
			P303-RESISTORS (All Resistors are ±5% and ¼W)
R321	1	GD05563140	56KΩ
R322	1	GD05563140	56KΩ
R323	1	GD05224140	220KΩ
R324	1	GD05224140	220KΩ
R325	1	GD05561140	560Ω
R326	1	GD05561140	560Ω
R327	1	GD05563140	56KΩ
R328	1	GD05563140	56KΩ
R329	1	GD05821140	820Ω
R330	1	GD05821140	820Ω
R331	1	GD05392140	3.9KΩ
R332	1	GD05392140	3.9KΩ
			P303-SEMICONDUCTORS
Q321	1	HT314002A0	Transistor 2SC1400
Q322	1	HT314002A0	Transistor 2SC1400
Q323	1	HT314002A0	Transistor 2SC1400
Q324	1	HT314002A0	Transistor 2SC1400
			P303-PLUG
J321	1	YP06000360	Plug (6P)
			P500-MIC AMP. CIRCUIT BOARD
P500	1	YF215T0010	P.W. Board, Mic Amp.
	1	ZZ215T8010	P.W. Board Assembly
			P500-CAPACITORS
C501	1	EA10505030	Elect 1μF 50V
C502	1	EA10505030	Elect 1μF 50V
C503	1	EA10505030	Elect 1μF 50V
C504	1	EA10505030	Elect 1μF 50V
C505	1	EA10505030	Elect 1μF 50V
C506	1	EA10505030	Elect 1μF 50V
C507	1	EA10405030	Elect 0.1μF 50V
C508	1	EA10405030	Elect 0.1μF 50V
C551	1	DF15393300	Film 0.039μF ±5%
C552	1	DF15393300	Film 0.039μF ±5%
C553	1	EA10701030	Elect 100μF 10V
			P500-RESISTORS (All Resistors are ±5% and ¼W)
R501	1	GD05153140	15KΩ
R502	1	GD05153140	15KΩ
R503	1	GD05104140	100KΩ
R504	1	GD05104140	100KΩ
R505	1	RK02030560	20KΩ(A) Variable, Rec Level
R506	1	RK02030560	20KΩ(A) Variable, Rec Level
R507	1	GD05104140	100KΩ
R508	1	GD05104140	100KΩ
R509	1	GD05394140	390KΩ
R510	1	GD05394140	390KΩ
R511	1	GD05104140	100KΩ
R512	1	GD05104140	100KΩ
R513	1	GD05394140	390KΩ
R514	1	GD05394140	390KΩ
R551	1	GD05222140	2.2KΩ
R552	1	GD05222140	2.2KΩ
R553	1	GD05122140	1.2KΩ
R554	1	GD05122140	1.2KΩ
R555	1	GD05332140	3.3KΩ
R556	1	GD05332140	3.3KΩ

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
R557	1	GD05472140	4.7KΩ
R558	1	GD05472140	4.7KΩ
R559	1	GD05561140	560Ω
R561	1	GD05562140	5.6KΩ
R562	1	GD05562140	5.6KΩ
			P500-SEMICONDUCTORS
Q501	1	HT309452A0	Transistor 2SC945(Q or R)
Q502	1	HT309452A0	Transistor 2SC945(Q or R)
Q503	1	HT309452A0	Transistor 2SC945(Q or R)
Q504	1	HT309452A0	Transistor 2SC945(Q or R)
			P500-MISCELLANEOUS
J502	1	YJ06001060	Jack, (7P)
J551	1	YJ01001110	Jack, Mic
J552	1	YJ01001110	Jack, Mic
J553	1	YP06001050	Plug, (5P)
J554	1	YJ06001050	Jack, (5P)
			P600-MOTOR FILTER CIRCUIT BOARD
P600	1	YF217T0010	P.W. Board, Motor Filter
	1	ZZ217T8010	P.W. Board Assembly
			P600-CAPACITORS
C601	1	EA47701630	Elect 470μF 16V
C602	1	EA22701030	Elect 220μF 10V
C603	1	EZ10701010	Elect 100μF 10V
C604	1	DF75562510	Film 5600pF ±5%
C606	1	DK16101500	Ceramic 100pF ±10%
C607	1	DK16101500	Ceramic 100pF ±10%
C608	1	DK18103300	Ceramic 0.01μF
			P600-RESISTORS
R601	1	GG05010120	1Ω ±5% ½W
R603	1	GD05472140	4.7KΩ ±5% ¼W
R604	1	GD05392140	3.9KΩ ±5% ¼W
R605	1	RA05030090	50KΩ Trimming
R606	1	GD05103140	10KΩ ±5% ¼W
R607	1	RA01040110	100KΩ Trimming
R608	1	RA01040110	100KΩ Trimming
			P600-MISCELLANEOUS
J601	1	YP06001060	Plug (7P)
J602	1	YJ06001060	Jack (7P)
L601	1	LC14730040	Choke Coil, 47μH
L602	1	LC14730040	Choke Coil, 47μH
T601	1	TC10200070	OSC Transformer, 49kHz

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
			P901-POWER SUPPLY CIRCUIT BOARD
P901	1	YH207T1510	P.W. Board, Power Supply
	1	ZZ207T8610	P.W. Board Assembly
			P901-CAPACITORS
C903	1	EA47801630	Elect 4700μF 16V
C905	1	DF16332300	Film 3300pF ±10%
C906	1	EA47701030	Elect 470μF 10V
C907	1	EA10801030	Elect 1000μF 10V
C908	1	DK18103320	Ceramic 0.01μF +80% −20%
C909	1	DK18103320	Ceramic 0.01μF +80% −20%
C911	1	EA47505030	Elect 4.7μF 50V
C912	1	EA47505030	Elect 4.7μF 50V
C913	1	DK16102300	Ceramic 0.001μF ±10%
C914	1	DK16102300	Ceramic 0.001μF ±10%
C915	1	EA10701030	Elect 100μF 10V
C916	1	EA10701030	Elect 100μF 10V
C917	1	EA10701030	Elect 100μF 10V
C918	1	EA10701030	Elect 100μF 10V
C919	1	DF17224300	Film 0.22μF ±20%
C920	1	DF17224300	Film 0.22μF ±20%
C921	1	EA10801030	Elect 1000μF 10V
C922	1	EA10801030	Elect 1000μF 10V
C923	1	EA22701630	Elect 220μF 16V
C924	1	EA22701630	Elect 220μF 16V
C925	1	DK18103320	Ceramic 0.01μF +80% −20%
C926	1	DK18103320	Ceramic 0.01μF +80% −20%
C927	1	EA10701630	Elect 100μF 16V
C929	1	DD15330370	Ceramic 33pF ±5%
C930	1	DD15330370	Ceramic 33pF ±5%
			P901-RESISTORS (All Resistors are ±5% and ¼W)
R901	1	GD05471140	470Ω
R903	1	GG05100120	10Ω ½W
R911	1	GD05222140	2.2KΩ
R912	1	GD05222140	2.2KΩ
R913	1	GD05102140	1KΩ
R914	1	GD05102140	1KΩ
R915	1	GD05562140	5.6KΩ
R916	1	GD05562140	5.6KΩ
R917	1	GD05222140	2.2KΩ
			P901-SEMICONDUCTORS
⚠Q901	1	HD20023100	Diode 10E-1
⚠Q902	1	HD20023100	Diode 10E-1
⚠Q903	1	HD20023100	Diode 10E-1
⚠Q904	1	HD20023100	Diode 10E-1
Q905	1	HT309452A0	Transistor 2SC945(P or Q)
Q906	1	HT309452A0	Transistor 2SC945(P or Q)
⚠Q907	1	HT403132A0	Transistor 2SD313(D or E)
Q908	1	HD30023090	Zener W071 7V
Q909	1	HT105642C0	Transistor 2SA564(R or S)
⚠Q911	1	HC10044030	IC LA4125
			P901-MISCELLANEOUS
J901	1	YP06001050	Plug (5P)
J902	1	YJ06001050	Jack (5P)
J911	1	YP06001050	Plug (5P)
J912	1	YJ06001250	Jack (5P)

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
			P931-HEAD PHONE CIRCUIT BOARD
P931	1	YH207T1620	P.W. Board, Head Phone
		ZZ207T8620	P.W. Board Assembly
			P931-RESISTORS
R931	1	GD05271140	270Ω ±5% ¼W
R932	1	GD05271140	270Ω ±5% ¼W
R933	1	GD05820140	82Ω ±5% ¼W
R934	1	GD05820140	82Ω ±5% ¼W
			P931-JACK
J931	1	YJ01001210	Head Phone Jack
			P941-POWER SWITCH CIRCUIT BOARD
P941	1	YH207T1630	P.W. Board, Pwer Switch
		ZZ207T8630	P.W. Board Assembly
⚠R941	1	GD05152140	Resistor, 1.5KΩ ±5% ¼W
Q971	1	HI10009300	L.E.D. AR2132D
⚠S941	1	SP02010230	Push Switch, Power

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
			P951-SPEAKER CIRCUIT BOARD (L)
P951	1	YH207T1640	P.W. Board, Speaker (L)
	1	ZZ207T8640	P.W. Board Assembly
J951	1	YJ07000740	Jack, Speaker
			P961-SPEAKER CIRCUIT BOARD (R)
P961	1	YH207T1650	P.W. Board, Speaker (R)
	1	ZZ207T8640	P.W. Board Assembly
J961	1	YJ07000740	Jack, Speader

(W01-99)	Assembly and Wiring
(T01-99)	Adjustment
(X01-00)	Correction

13. TECHNICAL SPECIFICATIONS

Tape Recorder Section

Style	Front load
Tape Drive System	Single Capstan Drive
Cartridge	Philips type compact cassette
Track System	Compatible Stereo 4-track 2 channel
Tape Speed	1-7/8 ips (4.75 cm/sec.)
Heads	2 Head System
Composition	Rec/Play: Superhard Permalloy Erase: Ferrite
Motor	DC Servo Controlled Motor x 1
Meters	x 2
Recording System	AC Bias
Erasing System	AC Erase
Overall Frequency Response:	
Normal and CrO_2 Tape	60 Hz +1/–7 dB
Metal Tape	60 Hz +0/–7 dB 10 kHz +2.5/–4.5 dB
Total Harmonic Distortion:	
Normal Tape	3%
CrO_2 Tape	3%
Metal Tape	3%
Wow and Flutter (DIN WTD)	0.25%
Fast Rewind Time	105 sec.
Fast Forward Time	105 sec.

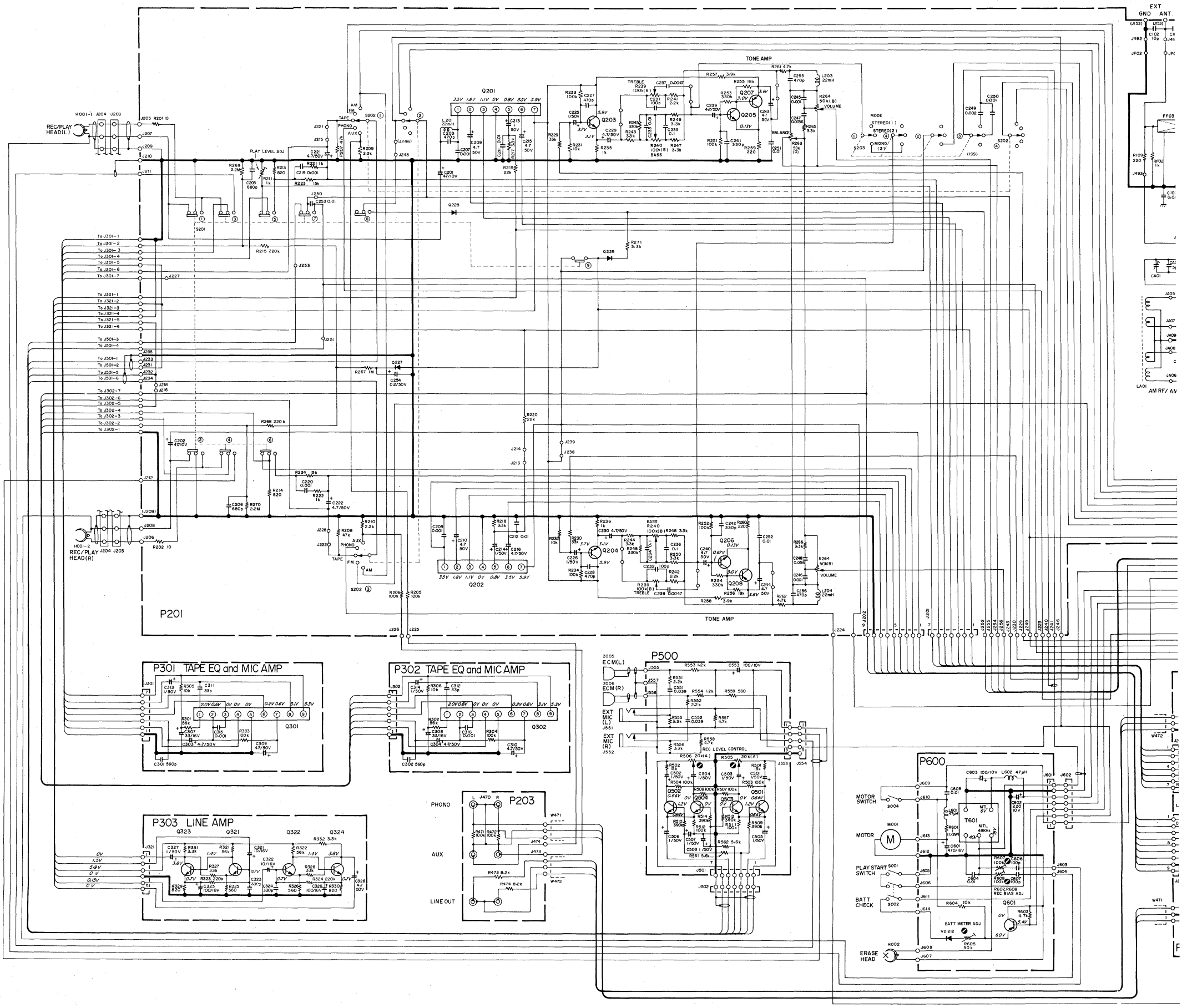
Tuner Section

Circuit System	4 Band FM/SW/MW/LW Superheterodyne
Frequency Range	FM 88 ~ 108 MHz SW 6 ~ 18 MHz MW 525 ~ 1605 kHz LW 150 ~ 370 kHz

General

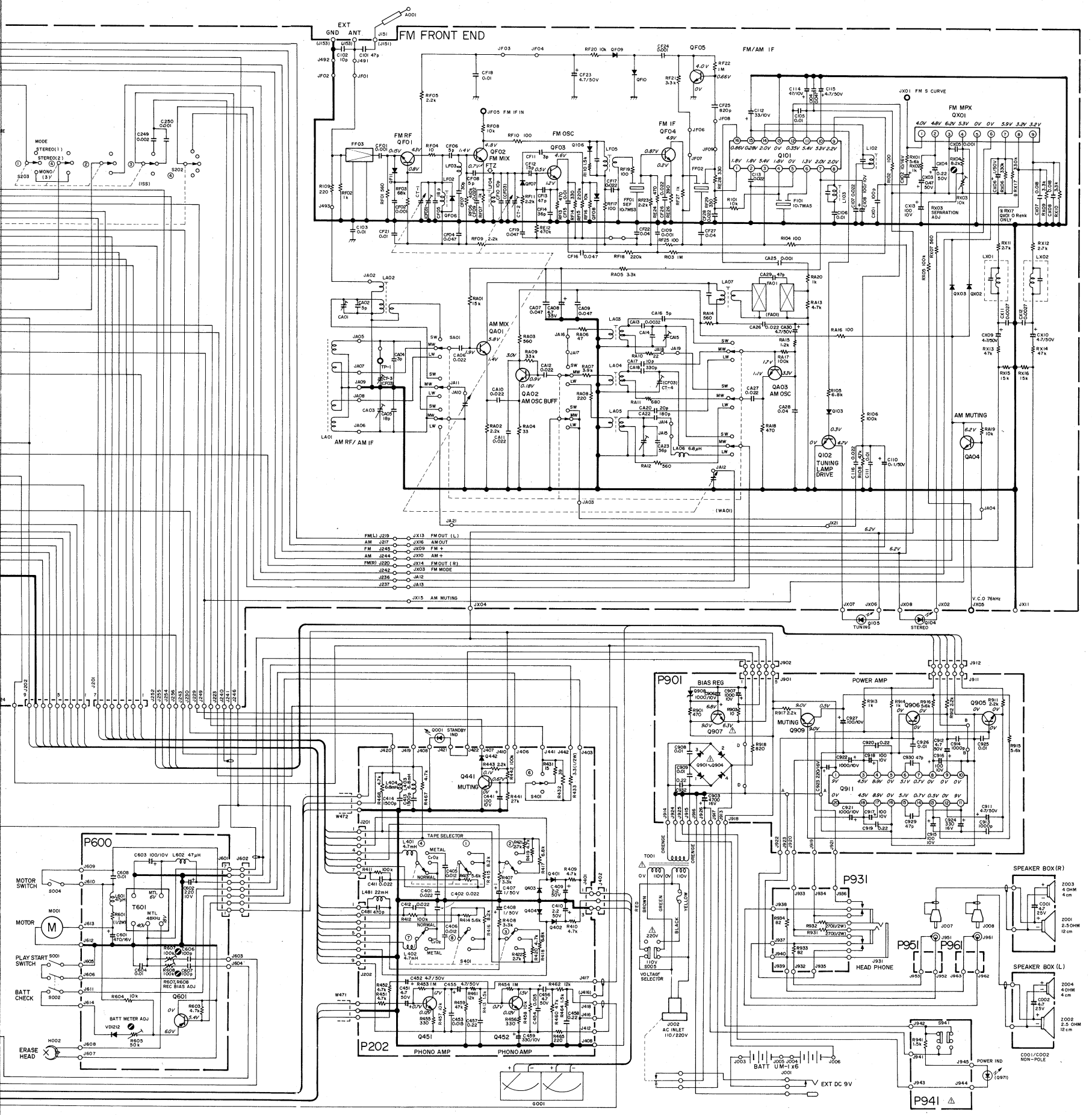
Semi-Conductor Complement:	
IC's	7
FET's	2
Transistors	34
Diodes	25
Unit Weight	14 lb., 4 oz. (6.7 kg)
Dimensions	56.1 x 23.7 x 12.9 cm (W.H.D.) (22" x 9-1/2" x 5")
Power Output	2.6W x 2 (1 kHz 10% Dist)
Power Requirements	110/220V ~, 50 Hz (This unit may be converted to 110V 50 Hz operation by placing the Voltage Selector Switch located within the Battery Compartment to the 220V position.) 8 "D" Size Batteries External 12V DC

14. SCHEMATIC DIAGRAM



Note on safety: The parts marked with ⚠ are important parts on the safety. Please use the parts having the designated parts number without fail.

Components and wiring are subject to change for modification with



TRANSISTOR

Q207,Q208
HT110151B0
2SA1015(Y)

Q102,Q203∿Q206,Q441,Q501∿Q504,QA04
HT309452A0
2SC945(QorR)

Q321∿Q324,Q451,Q452
HT314002A0
2SC1400

Q905,Q906
HT309452A0
2SC945(PorQ)

Q907
HT403132A0
2SD313(DorE)

Q909
HT105642C0
2SA564(RorS)

QA01,QA02
HT308291B0
2SC829(B)

QA03,QF04,QF05
HT308291C0
2SC829(C)

QF01,QF02
HT310471C0
2SC1047(C)

QF03
HT313591C0
2SC1359(C)

DIODE

Q104,Q105
HI10014020
LN217RP

Q401∿Q404
HD10003020
20A90

Q901∿Q904
HD20023100
10E-1

Q908
HD30023090
W07I 7V

Q971
HI10009300
AR2132D

Q227∿Q229, Q422, QF06, QF11, QX02, QX03
HD20001210
IS2473

QF08
HD40009090
IS2688B

QF07, QF09, QF10, Q103, Q106
HD10002020
0A90

IC

QX01
HC10051050
TA7323P

Q201, Q202
HC10019210
BA318

Q301, Q302
HC10012210
BA314

Q911
HC10044030
LA4125

Q101
HC10044030
HA12413

nts and wiring are subject to change for modification without notice.